#### **West Texas A&M University Advising Services Degree Checklist** 2020-2021

(For assistance completing this form, contact Advising Services at 806-651-5300)

NAME:	WT ID:	DATE:
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### Computer Science—Enterprise Systems Track **Engineering and Computer Science** ECS Building, Room 119 651-5257

CORE CURRICULUM COURSES: 42 HOURS ♦					
Communication (Core 10)					
ENGL 1301 Introduction to Academic Writing and Argumentation					
COMM 1315, 1318, or 1321**					
Mathematics (Core 20)	-				
See University Core Requirements below	(4)				
Life and Physical Sciences (Core 30)					
See University Core Requirements below	(6)				
Language, Philosophy and Culture (Core 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					
Creative Arts (Core 50)					
ARTS 1301, 1303, 1304; DANC 2303; MUSI 1306, 1307 (for music majors), 1310; or THRE 1310 Choose 1					
American History (Core 60)	American History (Core 60)				
HIST 1301, 1302, 2301, 2381 Choose 2	6				
Government/Political Science (Core 70)					
POSC 2305 and 2306	6				
Social and Behavioral Sciences (Core 80)					
AGBE 2317*; COMM 2377; CRIJ 1301; ECON 2301, 2302; PSYC 2301; SOCI 1301 Choose 1					
Component Area Option (Core 90)					
See University Core Requirements below					
COMPUTER SCIENCE—ENTERPRISE SYSTEMS TRACK					

## COMPUTER SCIENCE—ENTERPRISE SYSTEMS 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 ENGL 2311* Introduction to Professional and Technical Communication	3				
CORE 90 MATH 2413[1] AND CHEM 1411L[1] and 1412L[1] OR	3				
PHYS 2425L[1] and 2426L[1]  MAJOR REQUIREMENTS: 45 HOURS					
CS 1301 Introduction to Computer Science	3				
CS 1337, 1337L Introduction to Object-Oriented Programming	3				
CS 2325*, 2325L Computer Organization and Assembly Language	3				
CS 2336*, 2336L Objects and Data Abstraction	3				
CS 3305* Data Structures and Algorithms	3				
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#### **Bachelor of Science Degree BS.CS.ENT.SYS** (307)

CS 3352* Operating Systems and Networking  CS 3372* Net-Centric Computing  CS 4325* Computer Architecture  CS 4340* Database Systems Use, Design and Implementation  CS 4385* Concurrency and Distributed Systems  CS 4390* Software Development & Systems Prog.  CS 4391* Software Development & Prof. Practice  3  REQUIRED MATH COURSES: 16 HOURS  MATH 2321* Discrete Structures I  MATH 2322* Discrete Structures II  MATH 2311* Linear Algebra MATH 3311* Linear Algebra MATH 3321* Probability and Finite Mathematics MATH 3325* Introduction to Proofs MATH 3340* Calculus III  MATH 3342* Differential Equations I MATH 3343* Differential Equations II MATH 4340* Complex Variables I MATH 4341* Advanced Calculus MATH 4361* Statistics for the Sciences MATH 4362* Introduction to Numerical Analysis  ENTERPRISE SYSTEMS TRACK: 18 HOURS  CS 3303* Object-Oriented Software Development  3  CS 4322* Enterprise Systems Application Development  3  CS 4322* Advanced Topics in Enterprise Systems  3  CS 4360* Approaches to Internet and Computer Networks Security  TOTAL HOURS REQUIRED TO COMPLETE DEGREE  121			
CS 4325* Computer Architecture  CS 4340* Database Systems Use, Design and Implementation  CS 4385* Concurrency and Distributed Systems  CS 4390* Software Development & Systems Prog.  CS 4391* Software Development & Prof. Practice  3  REQUIRED MATH COURSES: 16 HOURS  MATH 2321* Discrete Structures I  MATH 2322* Discrete Structures II  3  MATH 2414* Calculus II  Take 6 hours from:  MATH 3311* Linear Algebra  MATH 3321* Probability and Finite Mathematics  MATH 3321* Probability and Finite Mathematics  MATH 3321* Probability and Finite Mathematics  MATH 3340* Calculus III  MATH 3340* Calculus III  MATH 3340* Circlius III  MATH 4310* Modern Algebra with Cryptography  MATH 4310* Modern Algebra with Cryptography  MATH 4361* Statistics for the Sciences  MATH 4362* Introduction to Numerical Analysis  ENTERPRISE SYSTEMS TRACK: 18 HOURS  CS 3303* Object-Oriented Software Development  3  CS 3321* Introduction to Enterprise Systems  3  CS 4321* Enterprise Systems Application Development  3  CS 4321* Enterprise Systems Assembler Programming  CS 4322* Advanced Topics in Enterprise Systems  3  CS 4360* Approaches to Internet and Computer Networks  Security	CS 3352* Operating Systems and Networking	3	
CS 4340* Database Systems Use, Design and Implementation  CS 4385* Concurrency and Distributed Systems  CS 4390* Software Development & Systems Prog.  CS 4391* Software Development & Prof. Practice  3  REQUIRED MATH COURSES: 16 HOURS  MATH 2321* Discrete Structures I  MATH 2322* Discrete Structures II  3  MATH 2414* Calculus II  4  Take 6 hours from:  MATH 3311* Linear Algebra  MATH 3321* Probability and Finite Mathematics  MATH 3340* Calculus III  MATH 3340* Calculus III  MATH 4310* Modern Algebra with Cryptography  MATH 4361* Statistics for the Sciences  MATH 4361* Statistics for the Sciences  MATH 4362* Introduction to Numerical Analysis  ENTERPRISE SYSTEMS TRACK: 18 HOURS  CS 3303* Object-Oriented Software Development  3  CS 4321* Introduction to Enterprise Systems  3  CS 4321* Enterprise Systems Assembler Programming  3  CS 4322* Advanced Topics in Enterprise Systems  3  CS 4360* Approaches to Internet and Computer Networks  Security	CS 3372* Net-Centric Computing	3	
Implementation  CS 4385* Concurrency and Distributed Systems  CS 4390* Software Development & Systems Prog.  CS 4391* Software Development & Prof. Practice  REQUIRED MATH COURSES: 16 HOURS  MATH 2321* Discrete Structures I  MATH 2322* Discrete Structures II  3 MATH 2414* Calculus II  Take 6 hours from:  MATH 3311* Linear Algebra  MATH 3321* Probability and Finite Mathematics  MATH 3325* Introduction to Proofs  MATH 3340* Calculus III  MATH 3340* Calculus III  MATH 4310* Modern Algebra with Cryptography  MATH 4341* Advanced Calculus  MATH 4361* Statistics for the Sciences  MATH 4362* Introduction to Numerical Analysis  ENTERPRISE SYSTEMS TRACK: 18 HOURS  CS 3303* Object-Oriented Software Development  3 CS 3322* Enterprise Systems Application Development  CS 4321* Enterprise Systems Assembler Programming  CS 4322* Advanced Topics in Enterprise Systems  3 CS 4360* Approaches to Internet and Computer Networks  Security	CS 4325* Computer Architecture		
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MATH 2321* Discrete Structures I  MATH 2322* Discrete Structures II  MATH 2322* Discrete Structures II  MATH 2414* Calculus II  Take 6 hours from:  MATH 3311* Linear Algebra  MATH 3321* Probability and Finite Mathematics  MATH 3321* Differential Equations I  MATH 3340* Calculus III  MATH 3342* Differential Equations II  MATH 3343* Differential Equations II  MATH 4310* Modern Algebra with Cryptography  MATH 4340* Complex Variables I  MATH 4361* Statistics for the Sciences  MATH 4362* Introduction to Numerical Analysis  ENTERPRISE SYSTEMS TRACK: 18 HOURS  CS 3303* Object-Oriented Software Development  3  CS 3322* Enterprise Systems Application Development  3  CS 4321* Enterprise Systems Assembler Programming  CS 4322* Advanced Topics in Enterprise Systems  3  CS 4360* Approaches to Internet and Computer Networks  Security	CS 4390* Software Development & Systems Prog.	3	
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 and Finite Mathematics  MATH 3325* Introduction to Proofs  MATH 3340* Calculus III  MATH 3342* Differential Equations I  MATH 4310* Modern Algebra with Cryptography  MATH 4340* Complex Variables I  MATH 4361* Statistics for the Sciences  MATH 4362* Introduction to Numerical Analysis  ENTERPRISE SYSTEMS TRACK: 18 HOURS  CS 3303* Object-Oriented Software Development 3  CS 3322* Enterprise Systems Application Development 3  CS 4321* Enterprise Systems Assembler Programming 3  CS 4322* Advanced Topics in Enterprise Systems 3  CS 4360* Approaches to Internet and Computer Networks Security 3	CS 4391* Software Development & Prof. Practice	3	
MATH 2322* Discrete Structures II  MATH 2414* Calculus II  Take 6 hours from:  MATH 3311* Linear Algebra  MATH 3321* Probability and Finite Mathematics  MATH 3325* Introduction to Proofs  MATH 3340* Calculus III  MATH 3340* Differential Equations I  MATH 4310* Modern Algebra with Cryptography  MATH 4340* Complex Variables I  MATH 4361* Statistics for the Sciences  MATH 4362* Introduction to Numerical Analysis  ENTERPRISE SYSTEMS TRACK: 18 HOURS  CS 3303* Object-Oriented Software Development  CS 3321* Introduction to Enterprise Systems  CS 4321* Enterprise Systems Assembler Programming  CS 4322* Advanced Topics in Enterprise Systems  3  CS 4360* Approaches to Internet and Computer Networks  Security	REQUIRED MATH COURSES: 16 HOURS	•	
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Take 6 hours from:  MATH 3311* Linear Algebra  MATH 3321* Probability and Finite Mathematics  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  ENTERPRISE SYSTEMS TRACK: 18 HOURS  CS 3303* Object-Oriented Software Development  3  CS 3321* Introduction to Enterprise Systems  3  CS 4321* Enterprise Systems Application Development  3  CS 4321* Enterprise Systems Assembler Programming  3  CS 4322* Advanced Topics in Enterprise Systems  3  CS 4360* Approaches to Internet and Computer Networks Security	MATH 2322* Discrete Structures II	3	
MATH 3311* Linear Algebra MATH 3321* Probability and Finite Mathematics 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 4361* Statistics for the Sciences MATH 4362* Introduction to Numerical Analysis  ENTERPRISE SYSTEMS TRACK: 18 HOURS  CS 3303* Object-Oriented Software Development 3 CS 3321* Introduction to Enterprise Systems 3 CS 4322* Enterprise Systems Application Development 3 CS 4321* Enterprise Systems Assembler Programming CS 4322* Advanced Topics in Enterprise Systems 3 CS 4360* Approaches to Internet and Computer Networks Security 3	MATH 2414* Calculus II	4	
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CS 3321* Introduction to Enterprise Systems 3  CS 3322* Enterprise Systems Application Development 3  CS 4321* Enterprise Systems Assembler Programming 3  CS 4322* Advanced Topics in Enterprise Systems 3  CS 4360* Approaches to Internet and Computer Networks Security 3	ENTERPRISE SYSTEMS TRACK: 18 HOURS	_	
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CS 4322* Advanced Topics in Enterprise Systems 3  CS 4360* Approaches to Internet and Computer Networks Security 3	CS 3322* Enterprise Systems Application Development		
CS 4360* Approaches to Internet and Computer Networks Security 3	CS 4321* Enterprise Systems Assembler Programming		
Security	CS 4322* Advanced Topics in Enterprise Systems		
TOTAL HOURS REQUIRED TO COMPLETE DEGREE 121		3	
	TOTAL HOURS REQUIRED TO COMPLETE DEGREE		

<sup>◆</sup> 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.

\* Indicates prerequisites—see catalog for more information.

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NOTE: This is NOT a degree plan. After completing 30 hours, students must request an official degree plan (using the online Degree Plan Request form) in order to progress. Students who have questions about their degree plan should contact the office of the dean of the College of Engineering, located in the Engineering and Computer Science Building, Room 119 (or call 806-651-5257).

CS 3307\* Algorithm Design and Analysis

CS 3310\* Programming Languages

CS 3315\* Scripting Languages

<sup>\*\*</sup> Recommended.

<sup>\*\*\*</sup> Or an equivalent course (second year, second semester) in a foreign language. NOTE: At least 39 hours of advanced work (3000- or 4000-level courses) for which tuition is paid must be earned at WTAMU, and 30 of the final 36 hours counted toward the degree must be earned at WTAMU. A maximum of six semester hours in religion and six semester hours in physical education (PHED) courses can count toward a baccalaureate degree.

# WTAMU ADVISING SERVICES 2020-2021 Curriculum Guide

Major Code: 307

CORE 90 - Take 1 course from:

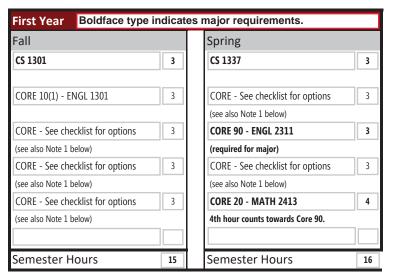
CORE - See checklist for options

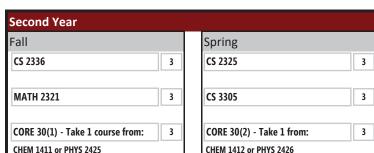
CHEM 1411L or PHYS 2425L

Semester Hours

MATH 2414

Major: Computer Science - Enterprise Sys. Track, B.S.





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CORE 90 - Take 1 course from:

CORE - See checklist for options

CHEM 1412L or PHYS 2426L

(see also Note 1 below)

Semester Hours

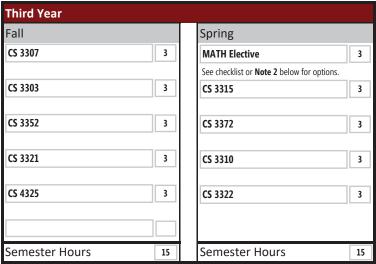
**MATH 2322** 

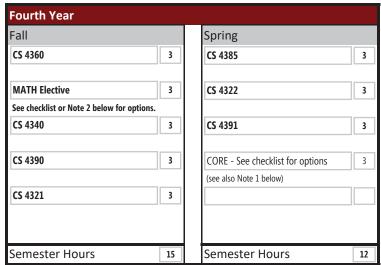
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16





#### **Degree Total Hours 121**

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.

Identified Marketable Skills:

Top 3 Local Employers or Industries/Professional Programs/Possible Career Opportunities

#### Prerequisites/Important Sequences/Other degree Notes:

Note 1 - CORE: Computer Science majors are required to take specific course Core 20, Core 30, and Core 90. For all other core 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.

Note 2: MATH Electives: MATH 3311, 3321, 3325, 3340, 3342, 3343, 4310, 4340, 4341, 4361, or 4362.