

# College of Science, Technology, Engineering, and Mathematics

## Data Science BS

92 credits

### Why major in Data Science?

The degree is built on the foundation of courses in mathematics, statistics, and computer science, with an emphasis on skills in analysis and mining of data, exhibiting the characteristics of high volume, velocity, and variety, as well as model building and computational skills applicable for reducing and managing large data sets. Jobs in the area of data science are currently about 15% of all current jobs listed. Data scientists study and solve complex problems in computing for business, medicine, science, and other fields. Data scientists are also among the highest paid professionals in the field of technology. Median salaries are \$148,000-\$250,000/year.

### Other Degree Options

Minor in Mathematics, Mathematics/Elementary, and Mathematics/Secondary, and Middle Level Endorsement.

### Career Opportunities

Data Scientist, Analytical Chemist, Research and Development Data Scientist



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This is an example of a four year class schedule. Academic Advisors are there to help create individualized plans.

First Year	Fall 1	Q2	Q3
	BACR (5 cr.)	BACR (5 cr.)	BACR (5 cr.)
	ENGL 101 (5 cr.)	ENGL 201 (5 cr.)	BACR (5 cr.)
	MATH 141 (5 cr.)	MATH 142 (5 cr.)	MATH 161 (5 cr.)
Second Year	Q5	Q6	Q7
	CSCD 110 (5 cr.)	BACR (5 cr.)	CSCD 210 (5 cr.)
	MATH 162 (5 cr.)	CSCD 211 (5 cr.)	MATH 163 (5 cr.)
	MATH 225 (5 cr.)	MATH 241 (5 cr.)	MATH 231 (5 cr.)
Third Year	Q9	Q10	Q11
	BACR (5 cr.)	Elective (4 cr.)	Diversity (5 cr.)
	CSCD 300 (5 cr.)	Global Studies (5 cr.)	CSCD 327 (4 cr.)
	MATH 385 (5 cr.)	CSCD 320 (4 cr.)	MATH 486 (5 cr.)
		MATH 485 (5 cr.)	
Fourth Year	Q13	Q14	Q15
	Elective (5 cr.)	Elective (5 cr.)	Elective (5 cr.)
	Elective (5 cr.)	CSCD 430 (4 cr.)	Elective (5 cr.)
	CSCD 429 (4 cr.)	MATH 444 (5 cr.)	MATH 491 (5 cr.)

Listed is a Sample Four Year Plan. Individual plans will vary based on placement test scores and course availability.

Student's name: \_\_\_\_\_ EWU ID: \_\_\_\_\_

College of Science, Technology, Engineering, and Mathematics

SOAR Department: | SOAR Major:

Major Declaration Form:

Math proficiency needed: Math 161

Bachelor of Science in Data Science  
2019-2020 Catalog Year

First year courses and prerequisites	Notes	Previously offered **
Q1 BACR (5 cr.)		
Q1 ENGL 101 COLL COMP: EXPOSITN & ARGUMNT (5 cr.) Prerequisite: Writing Placement Test or General Advising. □		F18, W19, S19
Q1 MATH 141 PRECALCULUS I (5 cr.) Prerequisite: a grade ?C in MATH 114 or equivalent course or a satisfactory score on the mathematics placement assessment (MPA).		F18, W19, S19
Q2 BACR (5 cr.)		
Q2 ENGL 201 COLL COMP: ANALYSIS/RES/DOCMNT (5 cr.) Prerequisite: ENGL 101, Writing Placement Test or general advising.		F18, W19, S19
Q2 MATH 142 PRECALCULUS MATH II (5 cr.) Prerequisite: MATH 141 or equivalent.		F18, W19, S19
Q3 BACR (5 cr.)		
Q3 BACR (5 cr.)		
Q3 MATH 161 CALCULUS I (5 cr.) Prerequisite: MATH 142.	Note: for the university proficiencies, this course may be substituted for MATH 107. □ □	F18, W19, S19

I have discussed this academic plan with the student listed above. Advisor name: \_\_\_\_\_

Advisor signature: \_\_\_\_\_

\* See the catalog for prerequisites and other details.

\*\* Future course offerings may differ from the past. Check the course schedule for future courses.

To follow this MAP, you should place into Math 161. If you place lower, your custom MAP may change.

This list of courses is for information purposes only. All students are required to follow the catalog requirements for the year they declared a major.

Second year courses and prerequisites	Notes	Previously offered **
Q5 CSCD 110 INTRODUCTION TO PROGRAMMING (5 cr.)		F18, W19, S19
Q5 MATH 162 CALCULUS II (5 cr.) Prerequisite: MATH 161.		F18, W19, S19
Q5 MATH 225 FOUNDATIONS OF MATHEMATICS (5 cr.) Prerequisite: MATH 161.	Note: you may not receive credit for both MATH 225 and MATH 301. □ □	F18, W19, S19
Q6 BACR (5 cr.)		
Q6 CSCD 211 PROGRAMMING PRINCIPLES II (5 cr.) Prerequisite: CSCD 210 with a grade ?C+, MATH 141 with a grade ?C.	Note: concurrent registration in MATH 142 or higher is highly recommended. □ □	F18, W19, S19
Q6 MATH 241 CALCULUS IV (5 cr.) Prerequisite: MATH 163.	Note: this course should be taken immediately after MATH 163, when possible. □ □	F18, W19, S19
Q7 CSCD 210 PROGRAMMING PRINCIPLES I (5 cr.) Prerequisite: MATH 114 with grade ?C and CSCD 110.	Note: Concurrent registration in MATH 141 or higher, highly recommended. Transcript evidence of a previous programming course at the high school or college level will be accepted for CSCD 110. □ □	F18, W19, S19
Q7 MATH 163 CALCULUS III (5 cr.) Prerequisite: MATH 162.		F18, W19, S19
Q7 MATH 231 LINEAR ALGEBRA (5 cr.) Prerequisite: MATH 142.		F18, W19, S19

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Third year courses and prerequisites

Notes

Previously offered \*\*

Q9	BACR (5 cr.)	
Q9	CSCD 300 DATA STRUCTURES (5 cr.) Prerequisites: CSCD 211 and MATH 142. A grade ?C+ is required for CSCD prerequisite and a ?C for each supporting prerequisite.	F18, W19, S19
Q9	MATH 385 PROBABILITY AND STATISTICS I (5 cr.) Prerequisites: MATH 163 and MATH 225 or permission of the instructor.	F18
Q10	Elective (4 cr.)	
Q10	Global Studies (5 cr.)	
Q10	CSCD 320 ALGORITHMS (4 cr.) Prerequisites: CSCD 300 with a grade ?C+, MATH 301 with a grade ?C, advancement programming exam clearance.	F18, W19, S19
Q10	MATH 485 PROBABILITY AND STATISTICS II (5 cr.) Prerequisites: MATH 231, MATH 241 and MATH 385 or permission of the instructor.	W19
Q11	Diversity (5 cr.)	
Q11	CSCD 327 RELATIONAL DATABASE SYSTEMS (4 cr.) Prerequisites: CSCD 300 with a grade ?C+ and MATH 301 with a grade ?C.	F18, W19, S19
Q11	MATH 486 PROBABILITY AND STATISTICS III (5 cr.) Prerequisite: MATH 485 or permission of the instructor.	

I have discussed this academic plan with the student listed above. Advisor name: \_\_\_\_\_ Advisor signature: \_\_\_\_\_

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Fourth year courses and prerequisites

Notes

Previously offered \*\*

Q13	Elective (5 cr.)		
Q13	Elective (5 cr.)	Must be upper-division	
Q13	CSCD 429 DATA MINING (4 cr.) Prerequisite: CSCD 320 with a grade ?C+, CSCD 327 with a grade ?C+, advancement programming exam clearance.		F18
Q14	Elective (5 cr.)	Must be upper-division	
Q14	CSCD 430 BIG DATA ANALYTICS (4 cr.) Prerequisites: CSCD 320 and CSCD 327, both with a grade ?C+ and APE clearance.		
Q14	MATH 444 NUMERICAL LINEAR ALGEBRA (5 cr.) Prerequisite: junior, senior or graduate standing; MATH 161 and MATH 231.		W19
Q15	Elective (5 cr.)		
Q15	Elective (5 cr.)	Must be upper-division	
Q15	MATH 491 SENIOR THESIS (5 cr.) Prerequisites: MATH 231, MATH 241, MATH 347, MATH 385, MATH 460.		F18, W19, S19

I have discussed this academic plan with the student listed above. Advisor name: \_\_\_\_\_

Advisor signature: \_\_\_\_\_

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