

### Data Science Complementary Major (38 credit hours)

A complementary major in data science prepares graduates to apply the techniques of data science to the area of their primary major. Graduates of this program will have developed an intuition for discovering meaning in data and will have the skills needed to provide value and purpose in the field of their primary major.

#### Major Requirements:

##### Data Science Core (32 credit hours):

- MATH 2010, Calculus I, 4 credit hours
- MATH 2120, Statistics, 4 credit hours
- POSC 2420, Applied Statistics Lab, 1 credit hour
- CPSC 2020, Fundamentals of Computational Thinking and Programming, 4 credit hours<sup>1</sup>
- CPSC 2030, Object-Oriented Analysis and Design, 4 credit hours
- CPSC 2040, Introduction to Data Science, 4 credit hours
- CPSC 2100, Database Programming, 4 credit hours
- CPSC 4100, Advanced Databases and Big Data Analytics, 4 credit hours
- BSNS 2310, Business Analytics, 3 credit hours

##### Communication Elective (3 credit hours):

- Choose one of the following ( or another elective approved by the data science advisor):
  - ARTS 2100, Introduction to Graphic Design
  - COMM 2200, Visual Communication
  - ENGL 3140, Writing and Digital Media
  - ENGL 3160, Professional Writing and Editing

##### Domain Elective (3 credit hours):

A major in data science also requires a major or minor in an application domain, as approved by a data science advisor. Suggested minors include: Accounting, Biology, Chemistry, Criminal Justice, Marketing, Management, Physics, Psychology, Social Media, and Sports Marketing.

- One course at the level of 3000 and above in the application domain

##### *Suggested domain elective courses:*

<p><i>Natural Sciences</i></p> <p>BIOL 4050, Genetics</p> <p>CHEM 3100, Analytical Chemistry</p> <p>CHEM 4110, Thermodynamics and Kinetics</p> <p>ENGR 4120, Computational Mechanics</p>	<p><i>Falls School of Business</i></p> <p>ACCT 3110, Managerial Accounting</p> <p>BSNS 2450, Data Analysis and Decision-Making for Business</p> <p>BSNS 3240, Operations Management</p> <p>MATH 3400, Mathematics of Finance</p>
<p><i>Social Sciences</i></p> <p>SOCI 3700, Introduction to Social Research</p> <p>POSC 3140, Elections, Public Opinion, and Democracy</p> <p>POSC 3360, War, Peace, and Security</p> <p>PSYC 3240, Experimental Design</p>	<p><i>Humanities</i></p> <p>BIBL 2050, Methods in Biblical Exegesis</p> <p>HIST 2300, Historical Inquiry</p> <p>RLGN 3120, Current Issues in Christian Ethics</p>

In the Liberal Arts Program, several requirements are fulfilled by this major:

- The Quantitative Reasoning requirement is fulfilled by CPSC 2020

Proposed Course Sequence:

Freshman: CPSC 2020; CPSC 2030, 2040

Sophomore: CPSC 2100; MATH 2120, POSC 2420

Junior: MATH 2010, Comm. Elective; CPSC 4100\*

Senior: BSNS 2310; Domain Elective

Data Science Complementary Major: 4 Year Suggested Course Sequence

SEMESTER 1		SEMESTER 2	
CPSC 2020 (Quant. Reasoning)	4 Hours	CPSC 2030	4 Hours
Major Courses + Liberal Arts	Remaining	CPSC 2040	4 Hours
		Major Courses + Liberal Arts	Remaining

SEMESTER 3		SEMESTER 4	
CPSC 2100	4 Hours	MATH 2120	4 Hours
Major Courses + Liberal Arts	Remaining	POSC 2420	1 Hour
		Major Courses + Liberal Arts	Remaining

SEMESTER 5		SEMESTER 6	
MATH 2010	4 Hours	CPSC 4100*	4 Hours
Communication Elective	3 Hours	Major Courses + Liberal Arts	Remaining
Major Courses + Liberal Arts	Remaining		

SEMESTER 7		SEMESTER 8	
BSNS 2310	3 Hours	Domain Elective	3 Hours
Major Courses + Liberal Arts	Remaining	Major Courses + Liberal Arts	Remaining

\*CPSC 4100 is offered alternate years, and can be taken Semester 6 or 8.