ANDERSON UNIVERSITY

Academic Advising

Data Science Major, Bachelor of Science (72-74 credit hours)

A major in data science prepares graduates to pursue a life of curiosity, exploration, and knowledge creation. 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 almost any field.

Major Requirements:

Mathematics Core (21 credit hours):

- MATH 2010, Calculus I, 4 credit hours
- MATH 2020, Calculus II, 4 credit hours
- MATH 3010, Linear Algebra, 4 credit hours
- MATH 3020, Calculus III, 4 credit hours
- MATH 4010, Mathematical Statistics, 4 credit hours
- POSC 2420, Applied Statistics Lab, 1 credit hour

Computer Science Core (27 credit hours):

- CPSC 2020, Fundamentals of Computational Thinking and Programming, 4 credit hours
- CPSC 2030, Object-Oriented Analysis and Design, 4 credit hours
- CPSC 2040, Introduction to Data Science, 4 credit hours
- CPSC 2080, Introduction to Cybersecurity, 3 credit hours
- CPSC 2100, Database Programming, 4 credit hours
- CPSC 2330, Introduction to Web Applications, 4 credit hours
- CPSC 2500, Data Structures and Algorithms, 4 credit hours

Professional Core (18 hours):

- CPSC 3520 Introduction to Artificial Intelligence, 4 credit hours
- CPSC 4100 Advanced Databases and Big Data Analytics, 4 credit hours
- CPSC 4430, Software Engineering, 4 credit hours
- Any 4 credit hours from the following:
  - CPSC 4480, Technical Certification, 1 credit hour
  - CPSC 4840, Data Science Internship, 2-4 credit hours
  - CPSC 4970, Senior Project, 2-4 credit hours
- CPSC 4950, Senior Seminar: Professional Development, 1 credit hour
- CPSC 4960, Senior Seminar: Ethics, 1 credit hour

Communication Elective (3-4 hours):

One course from:

- ARTS 2100, Introduction to Graphic Design
- COMM 2200, Visual Communication
- ENGL 3140, Writing and Digital Media
- ENGL 3160, Professional Writing and Editing
- or another communications elective approved by the data science advisor

Domain Elective (3-4 hours):

Questions? Please contact the Department of Computer Science.

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 domain of the minor

Suggested domain elective courses:

Natural Sciences BIOL 4050 Genetics CHEM 3100 Analytical Chemistry CHEM 4110 Thermodynamics and Kinetics ENGR 4120 Computational Mechanics PHYS 4220 Computational Physics PHYS 4410 Statistical Mechanics	*Falls School of Business* ACCT 3110 Managerial Accounting BSNS 2450 Business and Economic Data Analysis BSNS 3240 Operations Management MATH 3400 Mathematics of Finance
Social Sciences SOCI 3700 Introduction to Social Research POSC 3140 Elections, Public Opinion, and Democracy POSC 3360 War, Peace, and Security PSYC 3240 Experimental Design	*Humanities* BIBL 2050 Methods in Biblical Exegesis HIST 2300 Historical Inquiry RLGN 3120 Current Issues in Christian Ethics

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

- The Quantitative Reasoning requirement is fulfilled by CPSC 2020
- The Experiential Learning requirement is fulfilled by CPSC 4430
- The Speaking Intensive requirement is fulfilled by CPSC 4950
- One Writing Intensive requirement is fulfilled by CPSC 4960

Questions? Please contact the Department of Computer Science.

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Proposed Course Sequence:

Freshman: CPSC 2020, MATH 2010; CPSC 2030, 2040, MATH 2020
Sophomore: CPSC 2100, 2500, MATH 3010, Minor 1; CPSC 2330, MATH 3020, Minor 2
Junior: CPSC 2080, 4430, MATH 4010, Minor 3;
POSC 2420, CPSC 3520 or CPSC 4100, Communication Elective
Senior: CPSC 4950, 4480/4840/4970, Domain Elective; CPSC 4960, CPSC 3520 or CPSC 4100, 4480/4840/4970

Data Science Major, Bachelor of Science Suggested Course Sequence

SEMESTER 1		SEMESTER 2	
CPSC 2020 (Quant. Reason.)	4 Hours	CPSC 2030	4 Hours
MATH 2010	4 Hours	CPSC 2040	4 Hours
ENGL 1100/ENGL 1110	3-4 Hours	MATH 2020	4 Hours
LART 1050	1 Hour	ENGL 1120	3 Hours
Foreign Language	4 Hours	Personal Wellness	2 Hours

SEMESTER 3		SEMESTER 4	
CPSC 2100	4 Hours	CPSC 2330	4 Hours
CPSC 2500	4 Hours	MATH 3020	4 Hours
MATH 3010	4 Hours	Minor 2***	3-4 Hours
Minor 1***	3-4 Hours	COMM 1000	3 Hours
BIBL 2000	3 Hours	Christian Ways of Knowing	3 Hours

SEMESTER 5		SEMESTER 6	
CPSC 2080	3 Hours	CPSC 3520 (alt years)**	4 Hours
CPSC 4430 (Exp. Learn.)	4 Hours	POSC 2420*	1 Hour
MATH 4010*	4 Hours	Communication Elective	3-4 Hours
Minor 3***	3-4 Hours	Civic Ways of Knowing	3 Hours
Aesthetic Ways of Knowing	3 Hours	Global Ways of Knowing + WI	3 Hours

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ANDERSON UNIVERSITY

Academic Advising

SEMESTER 7		SEMESTER 8	
CPSC 4950 (SI)	1 Hour	CPSC 4960 (WI)	1 Hour
CPSC 4480/4840/4970	2 Hours	CPSC 4100 (alt years)**	4 Hours
Domain Elective	3-4 Hours	CPSC 4480/4840/4970	2 Hours
Social/Behavioral Ways of Knowing	3 Hours	Civic Discourse & C.R.	2-4 Hours
Additional Class	3 Hours	Additional Class	3 Hours

*MATH 4010 can be taken senior year, and POSC 2420 then taken in Semester 8.
**CPSC 3520 and CPSC 4100 are offered alternate years, and can be taken Semester 6 or 8.
***A minor is required.

Questions? Please contact the Department of Computer Science.