Updated May 2025

Bachelor of DATA SCIENCE (DS)

4-Year Recommended Course Sequence with *Calculus Entry*

Click on the Course Name to access the course in the Undergraduate Catalog 24-25

Fall Semester 1	Spring Semester 2	Fall Semester 3	Spring Semester 4	Fall Semester 5	Spring Semester 6	Fall Semester 7	Spring Semester 8
☆**INQ 170 [3]** Engineering Launch	**CIS 260 [4]** Intro to Programming **(CIS 151)**	**CIS 265 [4]** Data Structures and Algorithms **(CIS 260, MTH 181)**	**CIS 340 [3]** Systems Programming **(CIS 265)**	**CIS 430 [3]** Database Concepts **(CIS 265)**	**STA 400 [3]** Data Visualization **(Intro Stats. Ex: STA 323 or STA 347)**	**DSA 493 [2]** Senior Design I **(ESC 102 or ENG 102, DSA 330)**	**DSA 494 [3]** Senior Design II **(ESC 102 or ENG 102, DSA 493)**
CIS 151 [3] Invitation to Computing	**PHY 241 [5]** Physics I **(MTH 181)** OR **BIO 266/267 [4]** Human Anatomy & Physio. I /Lab OR **CHM 261/266 [4]** Gen. Chem. I/ Lab	**MTH 283 [2]** Multivariable Calculus For Engineers **(MTH 182- C or better)** **OR** **MTH 281 [4]** Multivariable Calculus **(MTH 182- C or better)**	**PHY 242 [5]** Physics II **(PHY 241)** OR **BIO 268/269 [4]** Human Anatomy & Physio. II /Lab **(BIO 266)** OR **CHM 262/267 [4]** Gen. Chem. II /Lab **(CHM 261)**	**CIS 390 [3]** Introduction to Algorithms **(CIS 265, MTH 220)**	**CIS 467 [3]** Artificial Intelligence **(CIS 390)**	**CIS 475 [3]** Computer Security **(CIS 340)**	****DS Major Elective [3]**
ENG 100 [3] Intensive Writing **or** **ENG 101 [3]** College Writing I	**ESC 102 [3]** Technical Writing (Preferred) **(ENG 101)** **OR** **ENG 102 [3]** College Writing II **(ENG 101)**	**DSA 230 [3]** Intro to Data Science I **(CIS 260)**	**STA 347 [3]** Applied Statistics **(STA 323- C or better)**	**STA 431 [3]** Categorical Data Analysis **(STA 347 - B or better)**	**DSA 460 [3]** Data Mining **(DSA 230)**	**DSA 469 [3]** Big Data Processing Systems **(CIS 430)**	****DS Major Elective [3]**
MTH 181 [4] Calculus I	**MTH 182 [4]** Calculus II **(MTH 181- C or better)**	**MTH 220 [3]** Discrete Math **(MTH 182 - C or better)**	**MTH 288 [3]** Linear Algebra **(MTH 182- C or better)**	**DSA 330 [3]** Intro to Data Science II **(ESC 102 or ENG 102, DSA 230, STA 323)**	**ESC 282 [3]** Engineering Economy **(MTH 182)**	****DS Major Elective [3]**	****DS Major Elective [3]**
	****ESC 130 [1]** Engineering Co-op Orientation	**STA 323 [3]** Statistical Methods **(MTH 182 - C or better)**	**Society and Human Behavior [3]**	**PHL 216 [3]** AI and Data Ethics	**Global Human Perspectives [3]**	**African American History and Culture [3]**	**Diversity in Society [3]**
13 Total Credit Hours	15-17 Total Credit Hours	15-17 Total Credit Hours	16-17 Total Credit Hours	15 Total Credit Hours	15 Total Credit Hours	14 Total Credit Hours	15 Total Credit Hours

Total Credits for DS Degree: 120-123 including ESC 130 Co-op Orientation

(Prerequisites) • (*Pre/co-requisite) • [# of Course Credits] • DSA XXX = Only Offered That Fall/Spring Semester

- Required DS Courses ****ESC 130** is optional, but highly recommended
- Required Science Courses
- Required English Courses
- Required Writing Across the Curriculum (WAC) Courses
- Required DS Electives ****3 semesters of co-op can replace one elective**
- Required Math Courses
- Core Curriculum Electives

☆**ESC 120** Intro to Engineering Design can replace **INQ 170** for transfer students and students who completed an inquiry launch course other than INQ 170. Neither course is required for transfer students with an Associates of Applied Science degree.

↓ **Scroll Down to View the Precalculus Entry 4-Year Plan Degree Chart** ↓

Updated May 2025

Bachelor of DATA SCIENCE (DS)

4-Year Recommended Course Sequence with *Precalculus Entry*

Click on the Course Name to access the course in the Undergraduate Catalog 24-25

Fall Semester 1	Spring Semester 2	Summer Semester #1	Fall Semester 3	Spring Semester 4	Summer Semester #2	Fall Semester 5	Spring Semester 6	Fall Semester 8	Spring Semester 9
★INQ 170 [3] Engineering Launch	CIS 260 [4] Intro to Programming (CIS 151)		CIS 265 [4] Data Structures and Algorithms (CIS 260, MTH 181)	CIS 340 [3] Systems Programming (CIS 265)		CIS 430 [3] Database Concepts (CIS 265)	STA 400 [3] Data Visualization (Intro Stats. Ex: STA 323 or STA 347)	DSA 493 [2] Senior Design I (ESC 102 or ENG 102, DSA 330)	DSA 494 [3] Senior Design II (ESC 102 or ENG 102, DSA 493)
CIS 151 [3] Invitation to Computing	PHY 241 [5] Physics I (MTH 181) OR BIO 266/267 [4] Human Anatomy & Physio. I /Lab OR CHM 261/266 [4] Gen. Chem. I/ Lab	OPSTEM MTH 180 SUMMER CALCULUS I [4] (Average B- or better in MTH 167&168)	DSA 230 [3] Intro to Data Science I (CIS 260)	PHY 242 [5] Physics II (PHY 241) OR BIO 268/269 [4] Human Anatomy & Physio. II /Lab (BIO 266) OR CHM 262/267 [4] Gen. Chem. II /Lab (CHM 261)	MTH 288 [3] Linear Algebra (MTH 182- C or better)	CIS 390 [3] Introduction to Algorithms (CIS 265, MTH 220)	CIS 467 [3] Artificial Intelligence (CIS 390)	CIS 475 [3] Computer Security (CIS 340)	**DS Major Elective [3]
ENG 100 [3] Intensive Writing or ENG 101 [3] College Writing I	ESC 102 [3] Technical Writing (Preferred) (ENG 101) OR ENG 102 [3] College Writing II (ENG 101)		PHL 216 [3] AI and Data Ethics	STA 323 [3] Statistical Methods (MTH 182 - C or better)		STA 347 [3] Applied Statistics (STA 323- C or better)	DSA 460 [3] Data Mining (DSA 230)	DSA 469 [3] Big Data Processing Systems (CIS 430)	**DS Major Elective [3]
MTH 165 [3] Intensive Precalc I OR MTH 167 [3] Precalculus I	MTH 168 [3] Precalculus II (MTH 165 or MTH 167 - C or better)		MTH 182 [4] Calculus II (MTH 181- C or better)	MTH 220 [3] Discrete Math (MTH 182 - C or better)		DSA 330 [3] Intro to Data Science II (ESC 102 or ENG 102, DSA 230, STA 323)	African American History and Culture [3]	**DS Major Elective [3]	**DS Major Elective [3]
	**ESC 130 [1] Engineering Co-op Orientation		Society and Human Behavior [3]	MTH 283 [2] Multivariable Calculus For Engineers (MTH 182- C or better) OR MTH 281 [4] Multivariable Calculus (MTH 182- C or better)		Global Human Perspectives [3]	ESC 282 [3] Engineering Economy (MTH 182)	STA 431 [3] Categorical Data Analysis (STA 347 - B or better)	Diversity in Society [3]
13 Total Credit Hours	14 – 16 Total Credit Hours	4 Total Credit Hrs	17 Total Credit Hours	15-18 Total Credit Hours	3 Total Credit Hours	15 Total Credit Hours	15 Total Credit Hours	14 Total Credit Hours	14 Total Credit Hours

Total Credits for DS Degree: 124-129 including ESC 130 Engineering Co-op Orientation

(Prerequisites) • (*Pre/co-requisite) • [# of Course Credits] • DSA XXX = Only Offered That Fall/Spring Semester

- Required DS Courses **ESC 130 is highly recommended, yet optional.
- Required Science Courses
- Required English Courses
- Required Writing Across the Curriculum (WAC) Courses
- Required DS Electives **3 semesters of co-op can replace one elective
- Required Math Courses
- Core Curriculum Electives

★**ESC 120** Intro to Engineering Design can replace **INQ 170** for transfer students and students who completed an inquiry launch course other than INQ 170. Neither course is required for transfer students with an Associates of Applied Science degree.

↓ Scroll Down to View the Precalculus Entry 5-Year Plan Degree Chart ↓

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Bachelor of DATA SCIENCE (DS)

5-Year Recommended Course Sequence with *Precalculus Entry*

Click on the Course Name to access the course in the Undergraduate Catalog 24-25

Fall Semester 1	Spring Semester 2	Summer Semester #1	Fall Semester 3	Spring Semester 4	Fall Semester 5	Spring Semester 6	Fall Semester 7	Spring Semester 8
★INQ 170 [3] Engineering Launch	CIS 260 [4] Intro to Programming (CIS 151)		CIS 265 [4] Data Structures and Algorithms (CIS 260, MTH 181)	CIS 340 [3] Systems Programming (CIS 265)	CIS 430 [3] Database Concepts (CIS 265)	STA 400 [3] Data Visualization (Intro Stats. Ex: STA 323 or STA 347)	DSA 493 [2] Senior Design I (ESC 102 or ENG 102, DSA 330)	DSA 494 [3] Senior Design II (ESC 102 or ENG 102, DSA 493)
ENG 100 [3] Intensive Writing or ENG 101 [3] College Writing I	ESC 102 [3] Technical Writing (Preferred) (ENG 101) OR ENG 102 [3] College Writing II (ENG 101)	OPSTEM MTH 180 SUMMER CALCULUS I [4] (Average B- or better in MTH 167&168)	PHY 241 [5] Physics I (MTH 181) OR BIO 266/267 [4] Human Anatomy & Physio. I /Lab OR CHM 261/266 [4] Gen. Chem. I/ Lab	PHY 242 [5] Physics II (PHY 241) OR BIO 268/269 [4] Human Anatomy & Physio. II /Lab (BIO 266) OR CHM 262/267 [4] Gen. Chem. II /Lab (CHM 261)	MTH 283 [2] Multivariable Calculus For Engineers (MTH 182- C or better) OR MTH 281 [4] Multivariable Calculus (MTH 182- C or better)	MTH 288 [3] Linear Algebra (MTH 182- C or better)	CIS 475 [3] Computer Security (CIS 340)	**DS Major Elective [3]
MTH 165 [3] Intensive Precalc I OR MTH 167 [3] Precalculus I	MTH 168 [3] Precalculus II (MTH 165 or MTH 167- C or better)		MTH 182 [4] Calculus II (MTH 181- C or better)	STA 323 [3] Statistical Methods (MTH 182 - C or better)	STA 347 [3] Applied Statistics (STA 323- C or better)	PHL 216 [3] AI and Data Ethics	DSA 469 [3] Big Data Processing Systems (CIS 430)	**DS Major Elective [3]
CIS 151 [3] Invitation to Computing	Diversity in Society [3]		DSA 230 [3] Intro to Data Science I (CIS 260)	MTH 220 [3] Discrete Math (MTH 182- C or better)	CIS 390 [3] Introduction to Algorithms (CIS 265, MTH 220)	CIS 467 [3] Artificial Intelligence (CIS 390)	**DS Major Elective [3]	DSA 460 [3] Data Mining (DSA 230)
Society and Human Behavior [3]			**ESC 130 [1] Engineering Co-op Orientation	African American History and Culture [3]	DSA 330 [3] Intro to Data Science II (ESC 102 or ENG 102, DSA 230, STA 323)	Global Human Perspectives [3]	**DS Major Elective [3]	ESC 282 [3] Engineering Economy (MTH 182)
							STA 431 [3] Categorical Data Analysis (STA 347 - B or better)	
15 Total Credit Hours	13 Total Credit Hours	4 Total Credit Hours	15-17 Total Credit Hours	16-17 Total Credit Hours	14-16 Total Credit Hours	15 Total Credit Hours	17 Total Credit Hours	15 Total Credit Hours

Total Credits for DS Degree: 124-129 including ESC 130 Engineering Co-op Orientation

(Prerequisites) • (*Pre/co-requisite) • [# of Course Credits] • DSA XXX = Only Offered That Fall/Spring Semester

- Required DS Courses **ESC 130 is highly recommended, yet optional.
- Required Science Courses
- Required English Courses
- Required Writing Across the Curriculum (WAC) Courses
- Required DS Electives **3 semesters of co-op can replace one elective
- Required Math Courses
- Core Curriculum Electives

★**ESC 120** Intro to Engineering Design can replace **INQ 170** for transfer students and students who completed an inquiry launch course other than INQ 170. Neither course is required for transfer students with an Associates of Applied Science degree.