

Sample Pathway to Concurrent Bachelor of Science in *Computer Science and Data Science*, 139 total credits, **Fall 2025**

| Semester 1 | Semester 2 | Semester 3 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> **CIS 150 (4) <i>Computer Science I</i> , or **CIS 1501 (4) <i>Computer Science for DS I</i> (MATH 115*) <input type="checkbox"/> COMP 105 (3) <i>Writing & Rhetoric I</i> DDC GEWO <input type="checkbox"/> MATH 115 (4) <i>Calculus I</i> (MATH 105 'C-' or placement); DDC GEQT <input type="checkbox"/> DDC course (3) GEHA See DDC master list for options | <input type="checkbox"/> **CIS 200 (4) <i>Computer Science II</i> , or **CIS 2001 (4) <i>Computer Science for DS II</i> (CIS 1501 'C-', MATH 115) <input type="checkbox"/> MATH 116 (4) <i>Calculus II</i> (MATH 115 'C-') <input type="checkbox"/> CIS 275 (4) <i>Discrete Structures I</i> (MATH 115, CIS 200/2001*) <input type="checkbox"/> DDC course (3) GEHA See DDC master list for options | <input type="checkbox"/> DDC Course (3) GESB <input type="checkbox"/> MATH 227 (3) <i>Intro to Linear Algebra</i> (MATH 116 'C-') **Must choose one of the following: > Group 1: CIS 1501, CIS 2001, and CIS 296/CIS 297, <u>or</u> > Group 2: CIS 150, CIS 200, CIS 298. Courses cannot be mixed from the two groups |
| Semester 4 | Semester 5 | Semester 6 |
| <input type="checkbox"/> MATH 215 (4) <i>Calculus III</i> (MATH 116 'C-') <input type="checkbox"/> CIS 306 (4) <i>Discrete Structures II</i> (CIS 275) <input type="checkbox"/> CIS 350 (4) <i>Data Structures</i> (MATH 115, CIS 200 or 2001 'C-', CIS 275) <input type="checkbox"/> STAT 305 (3) <i>Intro to Data Science</i> | <input type="checkbox"/> CIS 310 (4) <i>Assembly Language</i> (MATH 115, CIS 200 or 2001, CIS 275) <input type="checkbox"/> COMP 270 (3) <i>Technical Writing</i> (COMP 105 or placement); DDC GEWO <input type="checkbox"/> Lab Science I (4) Choose from: BIOL 130, GEOL 118, CHEM 134, PHYS 125, PHYS 150; DDC GENS <input type="checkbox"/> IMSE 317 (3) <i>Probability and Statistics</i> (MATH 116) | <input type="checkbox"/> ECON 201 (3) <i>Macroeconomics</i> , or ECON 202 (3) <i>Microeconomics</i> (MATH 105 recommended) <input type="checkbox"/> Lab Science Sequence II (4) Choose from: BIOL 320, GEOL 218, CHEM 136, PHYS 126, PHYS 151; DDC GENS |

* denotes a corequisite course
 Courses listed in parentheses () are prerequisites for the listed course

| Semester 7 | Semester 8 | Semester 9 |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> CIS 450 (4) <i>Operating Systems</i> (CIS 310, CIS 350, IMSE 317*) <input type="checkbox"/> **CIS 296 Fall (3) <i>Java</i> , or CIS 297 Winter (3) <i>Intro to C#</i> , or CIS 298 Winter (3) <i>Intro to Python</i> (CIS 200) <input type="checkbox"/> CIS 375 (4) <i>Software Engineering I</i> (COMP 270, CIS 350) <input type="checkbox"/> ECE 3100 Fall (3) <i>Data Science I</i> (CIS 150 or 1501, MATH 227, IMSE 317*) | <input type="checkbox"/> CIS 427 (4) <i>Comp Networks</i> (IMSE 317, CIS 350) <input type="checkbox"/> CIS 479 (3) <i>Artificial Intelligence</i> (CIS 350) <input type="checkbox"/> CIS 3200 Winter (3) <i>Data Science II</i> (ECE 3100, CIS 200 or 2001 'C-') <input type="checkbox"/> HHS 470 Winter (3) <i>Info Science and Ethics</i> | <input type="checkbox"/> Additional Lab Science (4) Choose course in different subject area from Lab Science Sequence on the previous page. Options include: ASTR 130 + 131, GEOL 118, GEOL 218, CHEM 134, PHYS 125, PHYS 150 <input type="checkbox"/> ENT 400 (3) <i>Entrepreneurship</i> (55 credits), or ENGR 400 (3) <i>Applied Business Techniques</i> (85 credits); DDC GEIN |
| Semester 10 | Semester 11 | Semester 12 |
| <input type="checkbox"/> STAT 430 Fall (3) <i>Applied Regression Analysis</i> (IMSE 317) <input type="checkbox"/> CIS 422 Fall (4) <i>Massive Data Management</i> (CIS 350) <input type="checkbox"/> DDC course (3) GESB See DDC master list for options <input type="checkbox"/> DS Application (3) See course options on next page | <input type="checkbox"/> CIS 4981 (2) <i>Senior Design I</i> (CIS 375, IMSE 317, CIS 3200, CIS 310, and CIS 427 or 450) <input type="checkbox"/> DS Application (3) <input type="checkbox"/> DS Application (3) <input type="checkbox"/> DS Application (3) <input type="checkbox"/> DS Application (3) See course options on next page | <input type="checkbox"/> CIS 4982 (2) <i>Senior Design II</i> (CIS 4981, STAT 430*) <input type="checkbox"/> DS Application (3) <ul style="list-style-type: none"> Application Area must total at least 18 credits **DS Elective requirement is 3 credits if STAT 325 was taken, or 4 credits if IMSE 317 was taken Each student's pathway is unique and yours may differ slightly from what you see here |

* denotes a corequisite course

Courses listed in parentheses () are prerequisites for the listed course

BACHELOR OF SCIENCE IN COMPUTER SCIENCE & DATA SCIENCE: APPLICATION AREA

Computational Analytics

Take 18 credit hours from the following:

- CCM 404 (3) *Dynamical Systems*
- CCM 472 (3) *Numerical Analysis*
- CCM 473 (3) *Matrix Computation*
- CIS 376 (4) *Software Engineering II*
- CIS 405 (3) *Algorithm Analysis & Design*
- CIS 411 (3) *Natural Language Processing*
- CIS 412 (3) *Introduction to Quantum Computing*
- CIS 439 (3) *Text Mining & Information Retrieval*
- CIS 446 (3) *Wireless and Mobile Computing Security*
- CIS 449 (3) *Introduction to software Security*
- CIS 451 (3) *Computer Graphics*
- CIS 452 (3) *Computer Animation*
- CIS 481 (3) *Computational Learning*
- CIS 482 (3) *Trustworthy Artificial Intelligence*
- CIS 4851 (3) *Data Security and Privacy*
- CIS 490H (3) *Advanced Topic: Edge Computing*

* denotes a corequisite course

Courses listed in parentheses () are prerequisites for the listed course