COLLEGE OF ENGINEERING & COMPUTER SCIENCE
DEARBORN | UNIVERSITY OF MICHIGAN-DEARBORN

Student name: ID #:

Sample Pathway to Bachelor of Science in *Data Science*, 120 total credits, **Fall 2025**

Semester 1	Semester 2	NOTES
☐ **CIS 1501** (4) *Computer Science for DS I* (MATH 115*) ☐ **COMP 105** (3) *Writing & Rhetoric I* DDC GEWO ☐ **MATH 115** (4) *Calculus I* (MATH 105 'C-' or placement); DDC GEQT ☐ **DDC course** (3) GEHA See DDC master list for options	☐ **CIS 2001** (4) *Computer Science for DS II* (CIS 1501 'C-', MATH 115) ☐ **CIS 275** (4) *Discrete Structures I* (MATH 115, CIS 200*), or **MATH 276** (4) *Discrete Math* (MATH 116 'C-'), or **MATH 315** (4) *Applied Combinatorics* (MATH 227) ☐ **MATH 116** (4) *Calculus II* (MATH 115 'C-') ☐ **DDC course** (3) GESB	The sample pathways were created with Fall and Winter semester enrollment in mind. Summer semesters can be used to lessen the workload, and/or participate in co-op or research. For DDC requirements, please see the University's guidelines Each student's pathway is unique and may differ slightly from this one See DDC master list for GESB/GEHA options
Semester 3	**Semester 4**	**NOTES**
☐ **MATH 215** (4) *Calculus III* (MATH 116 'C-') ☐ **DDC course** (3) GEHA See DDC master list for options ☐ **STAT 305** (3) *Intro to Data Science* ☐ **DDC course** (3) GESB See DDC master list for options ☐ **CIS 350** (4) *Data Structures* (MATH 115**,** CIS 2001 'C-', and 275)	☐ **Application Area** (3) See course descriptions for prereqs ☐ **MATH 227** (3) *Intro to Linear Algebra* (MATH 116 'C-') ☐ **COMP 270** (3) *Technical Writing* (COMP 105 or placement); DDC GEWO ☐ **STAT 325** (4) *Applied Statistics* (MATH 115 'C-'), or **IMSE 317** (3)** *Probability & Statistics* (MATH 116) ☐ **HHS 470** Winter (3) *Info Science & Ethics*	**DATA SCIENCE ELECTIVES (3-4 credits required)** DS Elective requirement is 3 credits if STAT 325 was taken, or 4 credits if IMSE 317 was taken Approved Electives: CIS 306 (4) CIS 411 (3), CIS 412 (3), CIS 425 (4) ,CIS 439 (3), CIS 446 (3), CIS 449 (3) CIS 479 (3) CIS 481 (3) CIS 482 (3), CIS 4851 (3), CIS 489 (3), DS 426 (3), ECE 427 (4), ECE 428 (3), ECE 434 (4), ENGR 399 (1), ENGR 492 (1-3), ENGR 493 (1-3), IMSE 3005 (4), IMSE 421 (3), IMSE 440 (3, IMSE 4585 (4), IMSE 4795 (4), MATH 420 (3), MATH 425 (3), MATH 325 (3), MATH 435 (3), MATH 462 (3), MATH 472 (3), MATH 473 (3), STAT 327 (3), STAT 440 (3), STAT 450 (3),STAT 460 (3)

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

Semester 5	Semester 6	NOTES
☐ **Application Area** (3) See course descriptions for prereqs ☐ **ECE 3100** Fall (4) *Data Science I* (CIS 1501, MATH 227, STAT 325* or IMSE 317*) ☐ **Lab Science Sequence I** (4) Choose from: BIOL 130, GEOL 118, CHEM 134, PHYS 125, PHYS 150; DDC GENS ☐ **CIS 422** Fall (4) *Big Data Management* (CIS 350)	☐ **CIS 3200** Winter (4) *Data Science II* (CIS 2001, ECE 3100) ☐ **ENT 400** (3) *Entrepreneurship* (55 credits); DDC GEIN, or **ENGR 400** (3) *Applied Business Techniques* (85 credits); DDC GEIN ☐ **CIS 375** (4) *Software Engineering I* (COMP 270, CIS 350) ☐ **Lab Science Sequence II** (4) Choose from same subject area as Sequence I: BIOL 320, GEOL 218, CHEM 136, PHYS 126, PHYS 151; DDC GENS	A course may have multiple requirements; however, **credit is only applied once**. Using one course to multiple requirements may result in a deficiency in total credits.
Semester 7	**Semester 8**	**NOTES**
☐ **CIS 4971** (2) *Senior Design I* (CIS 3200 and STAT 325 or IMSE 317); DDC GEWI, GECT, GECE ☐ **STAT 430** Fall (3) *Applied Regression Analysis* (STAT 325 or IMSE 317) ☐ **Application Area** (3) See course descriptions for prereqs ☐ **Application Area** (3) ☐ **DDC course** (3) GESB See DDC master list for options	☐ **CIS 4972** (2) *Senior Design II* (CIS 4971); DDC GEWI, GECT, GECE ☐ **Intersections** (3) GEIN ENGR 400, ENT 400, or IMSE 421 See individual courses for pre-reqs ☐ **Application Area** (3) ☐ **Application Area** (3) ☐ **DS Elective** (3-4)* See course descriptions for prereqs	• Application Area must total at least **18 credits**

BACHELOR OF SCIENCE IN DATA SCIENCE: APPLICATION AREA

Student Name:_____ **UMID:**_____

Title of Application Area: _____

Choose One From:

Business Analytics	Applied Social & Behavioral Science Analytics	Health & Medicine Analytics	Computational Analytics
DS 310 (3) *Data Mining for Business Intelligence* **15 credit hours in <u>one</u> of the following subject areas:** Accounting Finance* Technology Management Supply Chain Management *Students must meet the prerequisites for the course. ACC 298 is a prerequisite for some FIN courses and can be applied towards the finance subject area. Consider taking ECON 201 and 202 toward GESB requirements as they are prereqs for some FIN courses. Other prereq equivalents are noted below for registration purposes: ● IMSE 317 & STAT 430 = DS 302 ● IMSE 317 = DS 301	**18 credit hours in <u>one</u> of the following subject areas:** ● Political Science ● Economics ● History ● Criminal Justice ● Sociology ● Anthropology ● Psychology *Students can take up to 6 credit hours of GIS in place of discipline specific credits above	**18 credit hours from courses in Health and Medicine** ● HHS 200: Intro to Public Health ● HHS 201: Medical Terminology ● HHS 300: Intro to Health Policy ● HHS 330: Health Behavior Theory ● HHS 360: Responsible Drug Policy ● HHS 402: Internship in HHS ● HHS 403: Medical Information Systems ● HHS 404: Financing Health and Medical Systems ● HHS 415: Healthcare Administration ● HHS 433: Race/Ethnic Health ● HHS 442: Medical Ethics ● HHS 456: Healthcare and the Law	**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* ● CIS 405 (3) *Algorithm Analysis & Design* ● CIS 411 (3) *Natural Language Processing* ● 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 4851 (3) *Data Security and Privacy*

			• CIS 490H (3) *Advanced Topic: Edg Computing*

Course Requirements ***(18 credits required for Application Area)***
Data Science students must meet with the BS-DATA Program Advisor prior to choosing Application Area courses.

Course #	Course Title	Cr. Hrs.

Student Signature:_____ **Date:**_____

CIS Chair Signature:_____ **Date:**_____