

UMass Dartmouth – Program in Data Science
Requirements for Bachelor of Science In Data Science¹ (updated: 04/18/2025 jm)

Student Name: _____

Date: _____

Student ID: _____

Advisor: _____

CIS and DSC Core Courses² - 36 Credits – CIS courses must be passed with a grade of C or better.

_____	CIS 180 - Object-Oriented Programming I (4)
_____	CIS 181 - Object-Oriented Programming II (4) (Pre: CIS 180)
_____	CIS 280 - Software Specification and Design (4) (Pre: CIS 181)
_____	CIS 360 - Algorithms and Data Structures (4) (Pre: CIS 181; DSC 201; MTH 181)
_____	CIS 430 or CIS 452 – Data Mining and Knowledge Discovery (3) (Pre: CIS 360)
_____	Database Systems (3) (Pre: CIS 280)
_____	CIS 490 - Machine Learning (3) (Pre: CIS 360)
_____	DSC 101 – Intro to Data Science (3) – US 1E
_____	DSC 201 – Data Analysis & Visualization (3) (Pre: CIS 180)
_____	DSC 301 – Matrix Models for Data Analysis (3) (Pre: MTH 221)
_____	DSC 498 – Data Science Senior Capstone I (3)
_____	DSC 499 - Data Science Senior Capstone II (2) (Pre: DSC 498) - US 5A + 5B

Mathematics Requirements³ - 26 Credits – Must be passed with a grade of C- or better.

_____	MTH 151 (or MTH 153) - Calculus I (4) - USC 1D
_____	MTH 152 (or MTH 154)- Calculus II (4) (Pre: MTH 151 or 153)
_____	MTH 181 - Discrete Structures I (3)
_____	MTH 221 – Linear Algebra (3) (Pre: MTH 151 or 153)
_____	MTH 231 – Elem Stat I: Expl Data Analysis (3) (Pre: MTH 151 or 153)
_____	MTH 280 – Intro to Sci. Comp. (3) (Pre: MTH 152; Co: MTH 211 or 212 or 221)
_____	MTH 331 - Probability (3) (Pre: MTH 154 or 152)
_____	MTH 332 – Mathematical Statistics (3) (Pre: MTH 331)

DSC Electives^{2,3,4} - Minimum 9 Credits

In addition to the courses listed below, most 300+ level CIS and MTH courses (excluding CIS 495, CIS 498, CIS 499, and MTH 495) can be used as Technical Electives. See your COIN advisement report or the Undergraduate Catalog for the detailed list.

_____	AXD 363 – Virtual Reality Design (3) (Pre: DES 283; DES 384)
_____	CIS 430 or CIS 452 (whichever is not used to meet the Core Requirement above)
_____	EGR 411 – Introduction to Geographic Info Systems (3)
_____	MIS 315 – Information Systems (3) (Pre: ENL 102)
_____	MIS 332 – Business Data Systems (3) (Pre: MIS 315)
_____	MIS 432 – Database Design and Implementation (3) (Pre: MIS 322 or permission)
_____	PHL 319 – Information and Technology Ethics (3)
_____	_____
_____	_____
_____	_____

Science/Quantitative Requirements - Minimum 11 Credits

_____	PHY 113 - BIO 121&131 - CHM 151&161 (4) (Circle one)
_____	PHY 114 - BIO 122&132 - CHM 152&162 (4) (Must be continuation of above)
_____	_____ Science Elective (Should also satisfy US 2A if CHM taken above) (3)

English Requirements - 9 Credits

_____	ENL 101 - Critical Writing and Reading I (3) - US 1A
_____	ENL 102 - Critical Writing and Reading II (3) (Pre: ENL 101) - US 1B
_____	ENL 266 - Technical Communications (3) (Pre: ENL 102) - US 1C

Ethics and Social Responsibility/Science in the Engaged Community - 3 Credits

_____	CIS 381 - Social and Ethical Aspects of Computing (3) - US 2B
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University Studies⁵ - 15 Credits

_____	_____ Literature (3) - Choose from US 3A
_____	_____ Visual and Performing Arts (3) - Choose from US 3B
_____	_____ Human Questions and Contexts (3) - Choose from US 4A
_____	_____ Nature of US Society (3) - Choose from US 4B
_____	_____ Nature of the Global Society (3) - Choose from US 4C

Free Electives – 11 Credits

_____	_____ (3)
_____	_____ (3)
_____	_____ (3)
_____	_____ (2)

Comments:**Notes:**¹A minimum 2.000 GPA in the major and cumulative GPA, and a minimum 120 earned credits to graduate.² CIS courses must be passed with a grade of C or better in order to satisfy the prerequisite and meet the requirement.³MTH courses must be passed with a grade of C- or better in order to meet the requirement.⁴Must be chosen from an approved list. See the current catalog at www.umassd.edu/academics/catalogs/.⁵US - University Studies; A preapproved list can be found at:<http://www.umassd.edu/universitystudies/approvedcourses/>.