UMass Dartmouth – Program in Data Science

Requirements for Bachelor of Science In Data Science[1] (updated: 1/4/2024 jm)

Student Name: _____ Date: _____

Student ID: _____ Advisor: _____

CIS and DSC Core Courses[2] - 33 Credits

_____ 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 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) - USC 5A + 5B

Mathematics Requirements[3] - 26 Credits

_____ 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 152 or 154)
_____ 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 satisfy USC 2A if CHM Track**) (3)

English Requirements - 9 Credits

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

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

_____ CIS 381 - Social and Ethical Aspects of Computing (3) - USC 2B

University Studies[5] - 18 Credits

_____ DSC 101 or EGR 111 (3) - USC 1E
_____ _____ Literature (3) - Choose from USC 3A
_____ _____ Visual and Performing Arts (3) - Choose from USC 3B
_____ _____ Human Questions and Contexts (3) - Choose from USC 4A
_____ _____ Nature of US Society (3) - Choose from USC 4B
_____ _____ Nature of the Global Society (3) - Choose from USC 4C

Free Electives – 11 Credits

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

Comments:

Notes:

[1]A 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.
[3]MTH courses must be passed with a grade of C- or better in order to meet the requirement.
[4]Must be chosen from an approved list. See the current catalog at www.umassd.edu/academics/catalogs/.
[5]USC - University Studies Cluster; A preapproved list can be found at: http://www.umassd.edu/universitystudies/approvedcourses/.