## Department of Computer & Information Science - College of Engineering - UMass Dartmouth

Requirements for Bachelor of Science in Computer Science with a Concentration in Software Engineering\* (updated: 6/13/2024 jm)

Ctudent Neme	Data
Student Name: Student ID:	Date: Advisor:
CIS Core Courses (Grade of "C" or better) - 44 Credits	Mathematics Requirements - 17 Credits
CIS 180 - Object-Oriented Programming I (4)	MTH 153 (or MTH 151) - Calculus I (4) - USC 1D
CIS 181 - Object-Oriented Programming II (4) (Pre: CIS 180)	MTH 154 (or MTH 152)- Calculus II (4) (Pre: MTH 153 or 151)
CIS 190 - Introduction to Procedural Programming (4) (Pre: CIS 180)	MTH 181 - Discrete Structures I (3)
CIS 272 - Introduction to Computing Systems (4) (Co: CIS 190, MTH 181)	MTH 182 - Discrete Structures II (3) (Pre: MTH 181)
CIS 273 - Computer Organization and Design (3) (Pre: CIS 272)	Math Elective: MTH 211 or MTH 213 or MTH 221 or MTH 331 - (3) (Pre: MTH 154 or 152)
CIS 280 - Software Specification and Design (4) (Pre: CIS 181)	With Elective. Will 21 of Will 21 of Will 221 of Will 331 (3) (11c. Will 134 of 132)
CIS 360 - Algorithms and Data Structures (4) (Pre: CIS 181, CIS 190, MTH 181)	Science/Quantitative Requirements - Minimum 14 Credits
CIS 361 - Models of Computation (3) (Pre: CIS 181, MTH 182)	PHY 113 - BIO 121/131 - CHM 151/161 (4) (Circle one)
CIS 370 - Design of Operating Systems (4) (Pre: CIS 272)	PHY 114 - BIO 122/132 - CHM 152/162 (4) (Must be continuation of above)
CIS 481 - Parallel and Distributed Software Systems (3) (Pre: CIS 280, CIS 370)	Science Elective (Must satisfy USC 2A if CHM Track) (3)
CIS 498 - Software Engineering Project I (4) (Pre: CIS 280, CIS 362)	CIS 362 - Empirical Methods for Computer Science (3) (Pre: CIS 280)
CIS 499 - Software Engineering Project II (3) (Pre: CIS 498) - USC 5A + 5B	Sisse 2 Implied Methods for compater selective (a) (11cl sis 255)
do is sometime in great in (a) (in the do is a) social visit	English Requirements/Foundations for Engagement - 9 Credits
CIS Elective, 4 courses required, (Grade of "C" or better) - Minimum 12 Credits	ENL 101 - Critical Writing and Reading I (3) - USC 1A
Required Course	ENL 102 - Critical Writing and Reading II (3) (Pre: ENL 101) - USC 1B
CIS 432 – Software Architecture & Design (3) (Pre: CIS 280)	ENL 266 - Technical Communications (3) (Pre: ENL 102) - USC 1C
Complete Two Electives	Ethics and Social Responsibility/Science in the Engaged Community - 3 Credits
CIS 440 – Software Process and Project Management (3)	CIS 381 - Social and Ethical Aspects of Computing (3) - USC 2B
CIS 446 – Secure Software Development (3) (Pre: MTH 182)	
CIS 461 – Formal Methods for Software Engineering (3) (Pre: CIS 360)	University Studies** - 18 Credits
CIS 469 – Software Development for the Web (3) (Pre: CIS 360)	EGR 111 (3) - USC 1E (Transfer student: CIS 200 level or above, or equivalent)
CIS 470 – Software Testing & Automation (3) (Pre: MTH 181)	Literature (3) - Choose from USC 3A
One Additional Course	Visual and Performing Arts (3) - Choose from USC 3B
Any CIS 400 level course not currently being used to meet another requirement	Human Questions and Contexts (3) - Choose from USC 4A
(3)	Nature of US Society (3) - Choose from USC 4B
	Nature of the Global Society (3) - Choose from USC 4C
	Free Elective – 3 credits
	(3)
	Comment Box

Note: Any CIS core course or technical elective that is a prerequisite to another CIS course, must be passed with a grade of C or better in order to satisfy the prerequisite.

<sup>\*</sup>A minimum 2.00 GPA in the major, a minimum 2.00 cumulative GPA, and a minimum 120 earned credits to graduate.

 $<sup>**</sup> USC - University \ Studies \ Cluster; A \ preapproved \ list \ can \ be \ found \ at: \ http://www.umassd.edu/universitystudies/approved \ courses/$