

BS in Computer Science: Software Engineering (693225)

2022-2023 Program Requirements (74 - 76 Credit Hours)

<p>Grades below C- are not allowed in major courses.</p> <p>REQUIREMENT 1 Complete 16 courses</p> <p>CORE COURSES:</p> <p>C S 111 - Introduction to Computer Science 3.0</p> <p>C S 202 - Software Engineering Lab 1 1.0</p> <p>C S 203 - Software Engineering Lab 2 1.0</p> <p>C S 204 - Software Engineering Lab 3 1.0</p> <p>C S 224 - Introduction to Computer Systems 3.0</p> <p>C S 235 - Data Structures and Algorithms 3.0</p> <p>C S 236 - Discrete Structures 3.0</p> <p>C S 240 - Advanced Programming Concepts 4.0</p> <p>C S 312 - Algorithm Design and Analysis 3.0</p> <p>C S 324 - Systems Programming 3.0</p> <p>C S 329 - Testing, Analysis, and Verification 3.0</p> <p>C S 340 - Software Design 3.0</p> <p>C S 404 - Ethics and Computers in Society 2.0</p> <p>C S 452 - Database Modeling Concepts 3.0</p> <p>C S 480 - Software Engineering Capstone 1 3.0</p> <p>C S 481 - Software Engineering Capstone 2 3.0</p> <p>REQUIREMENT 2 Complete 4 courses</p> <p>SUPPORTING COURSES:</p> <p>MATH 112 - Calculus 1 4.0</p> <p>MATH 113 - Calculus 2 4.0</p> <p>PHSCS 121 - Introduction to Newtonian Mechanics 3.0</p> <p>*WRTG 316 - Technical Communication 3.0</p> <p>REQUIREMENT 3 Complete 1 option</p> <p>OPTION 3.1 Complete 1 course</p> <p>MATH 313 - (Not currently offered)</p> <p>OPTION 3.2 Complete 2 courses</p> <p>MATH 213 - Elementary Linear Algebra 2.0</p> <p>MATH 215 - Computational Linear Algebra 1.0</p> <p>REQUIREMENT 4 Complete 1 course</p> <p>STAT 121 - Principles of Statistics 3.0</p> <p>STAT 201 - Statistics for Engineers and Scientists 3.0</p> <p>REQUIREMENT 5 Complete 2 courses</p> <p>C S 260 - Web Programming 3.0</p> <p>C S 330 - Concepts of Programming Languages 3.0</p> <p>C S 345 - Operating Systems Design 3.0</p> <p>C S 356 - Designing the User Experience 3.0</p> <p>C S 453 - Fundamentals of Information Retrieval 3.0</p>	<p>C S 456 - Introduction to User Interface Software 3.0</p> <p>C S 460 - Computer Communications and Networking 3.0</p> <p>C S 462 - Large-Scale Distributed System Design 3.0</p> <p>C S 465 - Computer Security 3.0</p> <p>C S 486 - Verification and Validation 3.0</p> <p>REQUIREMENT 6 Complete 2 courses</p> <p>COURSES WILL NOT DOUBLE COUNT BETWEEN REQUIREMENT 5 AND REQUIREMENT 6.</p> <p>C S 252 - Introduction to Computational Theory 3.0</p> <p>C S 260 - Web Programming 3.0</p> <p>C S 330 - Concepts of Programming Languages 3.0</p> <p>C S 345 - Operating Systems Design 3.0</p> <p>C S 355 - Interactive Graphics and Image Processing 3.0</p> <p>C S 356 - Designing the User Experience 3.0</p> <p>C S 393 - Advanced Algorithms and Problem Solving 3.0</p> <p>C S 401R - Topics in Computer Science 3.0v</p> <p><i>You may take up to 3 credit hours.</i></p> <p>C S 405 - Creating and Managing a Software Business 3.0</p> <p>C S 412 - Linear Programming and Convex Optimization 3.0</p> <p>C S 450 - Computer Vision 3.0</p> <p>C S 453 - Fundamentals of Information Retrieval 3.0</p> <p>C S 455 - Computer Graphics 3.0</p> <p>C S 456 - Introduction to User Interface Software 3.0</p> <p>C S 460 - Computer Communications and Networking 3.0</p> <p>C S 462 - Large-Scale Distributed System Design 3.0</p> <p>C S 465 - Computer Security 3.0</p> <p>C S 470 - Introduction to Artificial Intelligence 3.0</p> <p>C S 471 - Voice User Interfaces 3.0</p> <p>C S 472 - Introduction to Machine Learning 3.0</p> <p>C S 474 - Introduction to Deep Learning 3.0</p> <p>C S 486 - Verification and Validation 3.0</p> <p>C S 493R - Computing Competitions 3.0</p> <p><i>You may take up to 3 credit hours.</i></p> <p>C S 497R - Undergraduate Research 3.0</p> <p><i>You may take up to 6 credit hours.</i></p> <p>C S 498R - Undergraduate Special Projects 3.0v</p> <p><i>You may take up to 3 credit hours.</i></p> <p>C S 501R - Advanced Topics in Computer Science 3.0v</p> <p><i>You may take up to 3 credit hours.</i></p> <p>C S 513 - Robust Control 3.0</p>	<p>C S 580 - Theory of Predictive Modeling 3.0</p> <p>EC EN 424 - Computer Systems 4.0</p> <p>EC EN 425 - Real-Time Operating Systems 4.0</p> <p>IT&C 567 - Cybersecurity and Penetration Testing 3.0</p> <p>MATH 411 - Numerical Methods 3.0</p> <p>MATH 431 - Probability Theory 3.0</p> <p>MATH 485 - Mathematical Cryptography 3.0</p> <p>Note: If C S 493R, C S 498R, or C S 501R is chosen, it must be taken for 3 credit hours.</p> <p>REQUIREMENT 7</p> <p>Complete Senior Exit interview with the C S department during last semester or term.</p> <p>Note: Math 112, Math 113, Phscs 121, WRTG 316, and C S 312 can be used to fill both General Education and program requirements. Advanced Writing and Oral Communication: WRTG 316. Quantitative Reasoning: Math 112 or 113. Languages of Learning: Math 112 or 113. Physical Science: C S 312 or Phscs 121.</p> <p>MAP DISCLAIMER</p> <p>While every reasonable effort is made to ensure accuracy, there are some student populations that could have exceptions to listed requirements. Please refer to the university catalog and your college advisement center/department for complete guidelines.</p> <p>DEPARTMENT INFORMATION</p> <p>Computer Science Department Brigham Young University 3361 Talmage Building Provo, UT 84602 Telephone: (801) 422-3027</p> <p>ADVISEMENT CENTER INFORMATION</p> <p>Physical and Mathematical Sciences College Advisement Center Brigham Young University N-181 ESC Provo, UT 84602 Telephone: (801) 422-2674</p>
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