Articulation Agreement by Major

Effective during the 2022-2023 Academic Year

To: California State University, Fullerton 2022-2023 General Catalog, Semester	From: De Anza College 2022-2023 General Catalog, Quarter

Computer Science, B.S.

COMPUTER SCIENCE

The degree program for the Bachelor of Science in Computer Science assumes that students have already obtained a working knowledge of personal computing fundamentals and applications, including word processing, spreadsheets, database systems, e-mail systems and presentation graphics.

The curriculum begins with a three-course sequence covering concepts of programming and data structures. If students have knowledge of these topics, but do not have the courses to transfer, nor AP scores to submit, they may take the Computer Science Placement Examination to waive one or more of these courses. The test may be taken only once, and scores are valid for two consecutive semesters.

General Education

All students at Cal State Fullerton are expected to complete prescribed units of General Education that are made up of courses outside of their chosen disciplines. Students seeking a degree in Engineering have been provided exceptions from some of the General Education requirements. For this reason, it is important that students take the approved G.E. courses for Engineering majors that are found in their Titan Degree Audit (TDA). Additionally, they should confirm the G.E. courses that are required within their specific programs with their respective advisers.

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LOWER DIVISION CORE

Select 15 Semester Unit(s) from the following

CPSC 120 - Introduction to Programming (3.00)	←	**CIS 26A** - C as a Second Programming Language (4.50)
CPSC 121 - Object-Oriented Programming (3.00)	←	**CIS 22A** - Beginning Programming Methodologies in C++ (4.50) **--- Or ---** **CIS 35A** - Java Programming (4.50) **--- Or ---** **CIS 36A** - Introduction to Computer Programming Using Java (4.50)
CPSC 131 - Data Structures (3.00)	←	**CIS 35A** - Java Programming (4.50) **--- And ---** **CIS 22C** - Data Abstraction and Structures (4.50) **CIS 22BH** - Intermediate Programming Methodologies in C++ - HONORS (4.50) **--- And ---** **CIS 22CH** - Data Abstraction and Structures - HONORS (4.50) **CIS 22CH** - Data Abstraction and Structures - HONORS (4.50) **--- And ---** **CIS 35A** - Java Programming (4.50) **CIS 36B** - Intermediate Problem Solving in Java (4.50) **--- And ---** **CIS 22CH** - Data Abstraction and Structures - HONORS (4.50) **CIS 22B** - Intermediate Programming Methodologies in C++ (4.50) **--- And ---** **CIS 22C** - Data Abstraction and Structures (4.50)
CPSC 240 - Computer Organization & Assembly Language (3.00)	←	**CIS 21JA** - Introduction to x86 Processor Assembly Language and Computer Architecture (4.50)
CPSC 253 - Cybersecurity Foundations and Principles (3.00)	←	**CIS 46** - Fundamentals of Digital Security (4.50)

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Select 1 Course(s) from the following

CPSC 223C - C Programming (3.00)	←	No Course Articulated
CPSC 223J - Java Programming (3.00)	←	**CIS 35B** - Advanced Java Programming (4.50)
CPSC 223N - Visual C# Programming (3.00)	←	**CIS 30A** - Introduction to C# Programming (4.50)
CPSC 223P - Python Programming (3.00)	←	**CIS 41A** - Python Programming (4.50)

MATHEMATICS REQUIREMENTS

Select 18 Semester Unit(s) from the following

MATH 150A - Calculus I (4.00)	←	**MATH 1A** - Calculus (5.00) **--- And ---** **MATH 1B** - Calculus (5.00) **MATH 1AH** - Calculus - HONORS (5.00) **--- And ---** **MATH 1BH** - Calculus - HONORS (5.00)
MATH 150B - Calculus II (4.00)	←	**MATH 1B** - Calculus (5.00) **--- And ---** **MATH 1C** - Calculus (5.00) **MATH 1BH** - Calculus - HONORS (5.00) **--- And ---** **MATH 1CH** - Calculus - HONORS (5.00)

MATH 170A - Mathematical Structures I (3.00)	←	**MATH 22** - Discrete Mathematics (5.00)
MATH 170B - Mathematical Structure II (3.00)	←	No Course Articulated
MATH 338 - Stat Appl to Natural Sci (4.00)	←	No Course Articulated

MATH AND SCIENCE (WITH CORRESPONDING LAB) ELECTIVES- SEE ADDITIONAL INFORMATION UNDER ARTICULATION DETAILS

Select 12 Semester Unit(s) from the following

BIOL 101 - Elements of Biology (3.00)	←	No Course Articulated
BIOL 101L - Elements of Biology Laboratory (1.00)	←	No Course Articulated
BIOL 151 - Cellular & Molecular Biology (4.00)	←	No Course Articulated
BIOL 152 - Evolution & Organismal Biology (4.00)	←	No Course Articulated

CHEM 120A - General Chemistry (5.00)	←	**CHEM 1A** - General Chemistry (5.00) **--- And ---** **CHEM 1B** - General Chemistry (5.00) **--- Or ---** **CHEM 1AH** - General Chemistry - HONORS (5.00) **--- And ---** **CHEM 1BH** - General Chemistry - HONORS (5.00)

CHEM 120B - General Chemistry (5.00)	←	**CHEM 1B** - General Chemistry (5.00) **--- And ---** **CHEM 1C** - General Chemistry and Qualitative Analysis (5.00)
CHEM 123 - Chemistry for Engineers (3.00)	←	No Course Articulated
CHEM 125 - Gen Chemistry B Lecture (3.00)	←	No Course Articulated

GEOL 101 - Introduction to Geology (3.00)	←	No Course Articulated
GEOL 101L - Introduction to Geology Laboratory (1.00)	←	No Course Articulated
GEOL 201 - Earth History (3.00)	←	No Course Articulated
GEOL 201L - Earth History Supplemental Lab (1.00)	←	No Course Articulated

MATH 250A - Calculus III (4.00)	←	**MATH 1C** - Calculus (5.00) **--- And ---** **MATH 1D** - Calculus (5.00) **MATH 1CH** - Calculus - HONORS (5.00) **--- And ---** **MATH 1DH** - Calculus - HONORS (5.00)
MATH 250B - Intro to Linear Algebra and Diff. Equations (4.00)	←	**MATH 2A** - Differential Equations (5.00) **--- And ---** **MATH 2B** - Linear Algebra (5.00)

PHYS 225 - Fundamental Phys; Mechanics (3.00)	←	No Course Articulated
PHYS 225L - Fundamental Physics Lab (1.00)	←	No Course Articulated
PHYS 226 - Fund Phys.Elect + Magnetism (3.00)	←	No Course Articulated
PHYS 226L - Fundamental Physics Lab (1.00)	←	No Course Articulated
PHYS 227 - Fund Phys: Waves, Optics, & Mod Phys (1.00 - 3.00)	←	No Course Articulated
PHYS 227L - Fundamental Physics Lab (1.00)	←	No Course Articulated

COMPUTER SCIENCE ELECTIVES

CPSC 254 - Software Development with Open Source Systems (3.00)	←	No Course Articulated

REQUIRED FOR GRADUATION

POSC 100 - American Government (3.00)	←	**POLI 1** - American Government and Politics (5.00)

ARTICULATION DETAILS

BIOL 101 - Elements of Biology (3.00) **--- And ---** **BIOL 101L** - Elements of Biology Laboratory (1.00)	←	No Course Articulated

BIOL 151 - Cellular & Molecular Biology (4.00) **--- And ---** **BIOL 152** - Evolution & Organismal Biology (4.00)	←	**BIOL 6A** - Form and Function in the Biological World (6.00) **--- And ---** **BIOL 6B** - Cell and Molecular Biology (6.00) **--- And ---** **BIOL 6C** - Ecology and Evolution (6.00) **BIOL 6AH** - Form and Function in the Biological World - HONORS (6.00) **--- And ---** **BIOL 6B** - Cell and Molecular Biology (6.00) **--- And ---** **BIOL 6CH** - Ecology and Evolution - HONORS (6.00)
CHEM 120A - General Chemistry (5.00) **--- And ---** **CHEM 120B** - General Chemistry (5.00)	←	**CHEM 1A** - General Chemistry (5.00) **--- And ---** **CHEM 1B** - General Chemistry (5.00) **--- And ---** **CHEM 1C** - General Chemistry and Qualitative Analysis (5.00)
CHEM 120A - General Chemistry (5.00) **--- And ---** **CHEM 125** - Gen Chemistry B Lecture (3.00)	←	No Course Articulated
CPSC 120 - Introduction to Programming (3.00) **--- And ---** **CPSC 121** - Object-Oriented Programming (3.00) **--- And ---** **CPSC 131** - Data Structures (3.00)	←	No Course Articulated
CPSC 253U - Workshop In Unix (1.00) **--- And ---** **CPSC 254** - Software Development with Open Source Systems (3.00)	←	No Course Articulated
GEOL 101 - Introduction to Geology (3.00) **--- And ---** **GEOL 101L** - Introduction to Geology Laboratory (1.00)	←	**GEOL 10** - Introductory Geology (5.00)
GEOL 201 - Earth History (3.00) **--- And ---** **GEOL 201L** - Earth History Supplemental Lab (1.00)	←	No Course Articulated
MATH 150A - Calculus I (4.00) **--- And ---** **MATH 150B** - Calculus II (4.00)	←	**MATH 1A** - Calculus (5.00) **--- And ---** **MATH 1B** - Calculus (5.00) **--- And ---** **MATH 1C** - Calculus (5.00)

MATH 150A - Calculus I (4.00) **--- And ---** **MATH 150B** - Calculus II (4.00) **--- And ---** **MATH 250A** - Calculus III (4.00)	←	**MATH 1A** - Calculus (5.00) **--- And ---** **MATH 1B** - Calculus (5.00) **--- And ---** **MATH 1C** - Calculus (5.00) **--- And ---** **MATH 1D** - Calculus (5.00)

PHYS 225 - Fundamental Phys; Mechanics (3.00) **--- And ---** **PHYS 225L** - Fundamental Physics Lab (1.00)	←	**PHYS 4A** - Physics for Scientists and Engineers: Mechanics (6.00)
PHYS 226 - Fund Phys.Elect + Magnetism (3.00) **--- And ---** **PHYS 226L** - Fundamental Physics Lab (1.00)	←	**PHYS 4B** - Physics for Scientists and Engineers: Electricity and Magnetism (6.00)
PHYS 227 - Fund Phys: Waves, Optics, & Mod Phys (1.00 - 3.00) **--- And ---** **PHYS 227L** - Fundamental Physics Lab (1.00)	←	**PHYS 4C** - Physics for Scientists and Engineers: Fluids, Waves, Optics and Thermodynamics (6.00) **--- And ---** **PHYS 4D** - Physics for Scientists and Engineers: Modern Physics (6.00)

END OF AGREEMENT