

# Articulation Agreement by Major

Effective during the 2022-2023 Academic Year

To: California State University, Fullerton  
2022-2023 General Catalog, Semester

From: Pasadena City College  
2022-2023 General Catalog, Semester

## 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.

### LOWER DIVISION CORE

#### Select 15 Semester Unit(s) from the following

<b>CPSC 120</b> - Introduction to Programming (3.00)	←	<b>CS 002</b> - Fundamentals of Computer Science I (4.00)
<b>CPSC 121</b> - Object-Oriented Programming (3.00)	←	<b>CS 003A</b> - Fundamentals of Computer Science II (C++) (4.00)
<b>CPSC 131</b> - Data Structures (3.00)	←	<b>CS 008</b> - Fundamentals of Computer Science III-Data Structures (4.00)
<b>CPSC 240</b> - Computer Organization & Assembly Language (3.00)	←	<b>CS 066</b> - Assembly Language Programming for the Sciences and Mathematics (4.00)
<b>CPSC 253</b> - Cybersecurity Foundations and Principles (3.00)	←	<b>CIS 061</b> - Introduction to Information Systems Security (3.00)

--- And ---

#### Select 1 Course(s) from the following

<b>CPSC 223C</b> - C Programming (3.00)	←	No Course Articulated
<b>CPSC 223J</b> - Java Programming (3.00)	←	<b>CS 003B</b> - Fundamentals of Computer Science (JAVA) (4.00)
<b>CPSC 223N</b> - Visual C# Programming (3.00)	←	No Course Articulated
<b>CPSC 223P</b> - Python Programming (3.00)	←	<b>CS 003C</b> - Fundamentals of Computer Science (Python) (4.00)

### MATHEMATICS REQUIREMENTS

#### Select 18 Semester Unit(s) from the following

<b>MATH 150A</b> - Calculus I (4.00)	←	<b>MATH 005A</b> - Single Variable Calculus I (5.00)
<b>MATH 150B</b> - Calculus II (4.00)	←	<b>MATH 005B</b> - Single Variable Calculus II (5.00)

<b>MATH 170A</b> - Mathematical Structures I (3.00)	←	<b>MATH 022</b> - Discrete Mathematics (4.00)
		--- Or ---
		<b>CS 045</b> - Discrete Structures with Computer Science Applications (5.00)
<b>MATH 170B</b> - Mathematical Structure II (3.00)	←	No Course Articulated
<b>MATH 338</b> - 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

<b>BIOL 101</b> - Elements of Biology (3.00)	←	No Course Articulated
<b>BIOL 101L</b> - Elements of Biology Laboratory (1.00)	←	No Course Articulated
<b>BIOL 151</b> - Cellular & Molecular Biology (4.00)	←	<b>BIOL 010A</b> - Cellular Biology, Genetics and Evolution (5.00)
<b>BIOL 152</b> - Evolution & Organismal Biology (4.00)	←	No Course Articulated

<b>CHEM 120A</b> - General Chemistry (5.00)	←	<b>CHEM 001A</b> - General Chemistry and Chemical Analysis I (5.00)
<b>CHEM 120B</b> - General Chemistry (5.00)	←	<b>CHEM 001B</b> - General Chemistry and Chemical Analysis II (5.00)
<b>CHEM 123</b> - Chemistry for Engineers (3.00)	←	No Course Articulated
<b>CHEM 125</b> - Gen Chemistry B Lecture (3.00)	←	No Course Articulated

<b>GEOL 101</b> - Introduction to Geology (3.00)	←	<b>GEOL 001</b> - Physical Geology (4.00)
<b>GEOL 101L</b> - Introduction to Geology Laboratory (1.00)	←	No Course Articulated
<b>GEOL 201</b> - Earth History (3.00)	←	<b>GEOL 002</b> - Historical Geology (4.00)
<b>GEOL 201L</b> - Earth History Supplemental Lab (1.00)	←	No Course Articulated

<b>MATH 250A</b> - Calculus III (4.00)	←	<b>MATH 005C</b> - Multivariable Calculus (5.00)
<b>MATH 250B</b> - Intro to Linear Algebra and Diff. Equations (4.00)	←	<div style="border: 1px solid black; padding: 5px; margin: 5px 0;"> <b>MATH 010</b> - Linear Algebra and Applications (4.00)         </div> <div style="text-align: center; background-color: #cccccc; padding: 2px 10px; margin: 2px 0;">--- And ---</div> <div style="border: 1px solid black; padding: 5px; margin: 5px 0;"> <b>MATH 055</b> - Differential Equations (4.00)         </div>

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

## COMPUTER SCIENCE ELECTIVES

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

## REQUIRED FOR GRADUATION

<b>POSC 100</b> - American Government (3.00)	←	<b>POLS 001</b> - Introduction to American Government and Politics (3.00)
--	---	---

## ARTICULATION DETAILS

<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <b>BIOL 101</b> - Elements of Biology (3.00)  <div style="text-align: center; background-color: #cccccc; padding: 2px 10px;">--- And ---</div> <b>BIOL 101L</b> - Elements of Biology Laboratory (1.00)         </div>	←	<b>BIOL 011</b> - General Biology (4.00)
<div style="border: 1px solid black; padding: 5px;"> <b>BIOL 151</b> - Cellular &amp; Molecular Biology (4.00)  <div style="text-align: center; background-color: #cccccc; padding: 2px 10px;">--- And ---</div> <b>BIOL 152</b> - Evolution &amp; Organismal Biology (4.00)         </div>	←	<div style="border: 1px solid black; padding: 5px;"> <b>BIOL 010A</b> - Cellular Biology, Genetics and Evolution (5.00)  <div style="text-align: center; background-color: #cccccc; padding: 2px 10px;">--- And ---</div> <b>BIOL 010B</b> - The Diversity of Life on Earth: Structure, Function and Ecology (4.00)         </div>

**CHEM 120A** - General Chemistry (5.00)

--- And ---

**CHEM 120B** - General Chemistry (5.00)



**CHEM 001A** - General Chemistry and Chemical Analysis I (5.00)

--- And ---

**CHEM 001B** - General Chemistry and Chemical Analysis II (5.00)

**CHEM 120A** - General Chemistry (5.00)

--- And ---

**CHEM 125** - Gen Chemistry B Lecture (3.00)



**CHEM 001A** - General Chemistry and Chemical Analysis I (5.00)

--- And ---

**CHEM 001B** - General Chemistry and Chemical Analysis II (5.00)

**CPSC 120** - Introduction to Programming (3.00)

--- And ---

**CPSC 121** - Object-Oriented Programming (3.00)

--- And ---

**CPSC 131** - Data Structures (3.00)



**CS 002** - Fundamentals of Computer Science I (4.00)

--- And ---

**CS 003A** - Fundamentals of Computer Science II (C++ ) (4.00)

--- And ---

**CS 008** - Fundamentals of Computer Science III-Data Structures (4.00)

**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 001** - Physical Geology (4.00)

**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 005A** - Single Variable Calculus I (5.00)

--- And ---

**MATH 005B** - Single Variable Calculus II (5.00)

**MATH 150A** - Calculus I (4.00)

--- And ---

**MATH 150B** - Calculus II (4.00)

--- And ---

**MATH 250A** - Calculus III (4.00)



**MATH 005A** - Single Variable Calculus I (5.00)

--- And ---

**MATH 005B** - Single Variable Calculus II (5.00)

--- And ---

**MATH 005C** - Multivariable Calculus (5.00)

**PHYS 225** - Fundamental Phys; Mechanics (3.00)

--- And ---

**PHYS 225L** - Fundamental Physics Lab (1.00)



**PHYS 001A** - Physics for Scientists and Engineers I: Mechanics (5.00)

--- Or ---

**PHYS 008A** - Physics for Scientists and Engineers I: Mechanics (5.00)

**PHYS 226** - Fund Phys.Elect + Magnetism (3.00)

--- And ---

**PHYS 226L** - Fundamental Physics Lab (1.00)



**PHYS 001C** - General Physics (5.00)

**PHYS 008B** - Physics for Scientists and Engineers II: Waves, Electricity & Magnetism (5.00)

**PHYS 227** - Fund Phys: Waves, Optics, & Mod Phys (1.00 - 3.00)

--- And ---

**PHYS 227L** - Fundamental Physics Lab (1.00)



**PHYS 001B** - General Physics (5.00)

--- And ---

**PHYS 001D** - General Physics (5.00)

--- Or ---

**PHYS 008C** - Physics for Scientists and Engineers III:  
Thermodynamics, Optics, and Modern Physics (5.00)

**END OF AGREEMENT**