

# Articulation Agreement by Major

Effective during the 2022-2023 Academic Year

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

From: Hartnell 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>CSS 1</b> - Intro to Computer Science & Programming Fundamentals (4.00)
<b>CPSC 121</b> - Object-Oriented Programming (3.00)	←	<b>CSS 2A</b> - Object Oriented Programming (4.00)
<b>CPSC 131</b> - Data Structures (3.00)	←	<b>CSS 2B</b> - Data Structures and Algorithms (4.00)
<b>CPSC 240</b> - Computer Organization & Assembly Language (3.00)	←	<b>CSS 3</b> - Computer Architecture and Assembly Language Programming (4.00)
<b>CPSC 253</b> - Cybersecurity Foundations and Principles (3.00)	←	No Course Articulated

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#### 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)	←	No Course Articulated
<b>CPSC 223N</b> - Visual C# Programming (3.00)	←	No Course Articulated
<b>CPSC 223P</b> - Python Programming (3.00)	←	No Course Articulated

### MATHEMATICS REQUIREMENTS

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

<b>MATH 150A</b> - Calculus I (4.00)	←	<b>MAT 3A</b> - Analytic Geometry and Calculus I (4.00)
<b>MATH 150B</b> - Calculus II (4.00)	←	<b>MAT 3B</b> - Analytic Geometry and Calculus II (4.00)

<b>MATH 170A</b> - Mathematical Structures I (3.00)	←	<b>CSS 7</b> - Discrete Structures (4.00)
<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>BIO 1</b> - Fundamental Biological Concepts (5.00)
<b>BIOL 152</b> - Evolution & Organismal Biology (4.00)	←	

**BIO 2** - General Zoology (5.00)

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**BIO 3** - General Botany (5.00)

<b>CHEM 120A</b> - General Chemistry (5.00)	←	<b>CHM 1A</b> - General Chemistry I (5.00)
<b>CHEM 120B</b> - General Chemistry (5.00)	←	<b>CHM 1B</b> - General Chemistry 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>GEL 2</b> - Introduction to Geology (3.00)
<b>GEOL 101L</b> - Introduction to Geology Laboratory (1.00)	←	No Course Articulated
<b>GEOL 201</b> - Earth History (3.00)	←	<b>GEL 6</b> - History of the Earth (4.00)
<b>GEOL 201L</b> - Earth History Supplemental Lab (1.00)	←	No Course Articulated

<b>MATH 250A</b> - Calculus III (4.00)	←	<b>MAT 3C</b> - Analytic Geometry and Calculus III (4.00)
<b>MATH 250B</b> - Intro to Linear Algebra and Diff. Equations (4.00)	←	

**MAT 4** - Linear Algebra (3.00)

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**MAT 5** - Differential Equations (3.00)

<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
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### REQUIRED FOR GRADUATION

<b>POSC 100</b> - American Government (3.00)	←	<b>POL 1</b> - American Political Institutions (3.00)
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### ARTICULATION DETAILS

**BIOL 101** - Elements of Biology (3.00)  
 --- And ---  
**BIOL 101L** - Elements of Biology Laboratory (1.00)

← **BIO 10** - General Biology (4.00)

**BIOL 151** - Cellular & Molecular Biology (4.00)  
--- And ---  
**BIOL 152** - Evolution & Organismal Biology (4.00)



**BIO 1** - Fundamental Biological Concepts (5.00)  
--- And ---  
**BIO 2** - General Zoology (5.00)  
--- And ---  
**BIO 3** - General Botany (5.00)

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



**CHM 1A** - General Chemistry I (5.00)  
--- And ---  
**CHM 1B** - General Chemistry II (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)



**CSS 1** - Intro to Computer Science & Programming Fundamentals (4.00)  
--- And ---  
**CSS 2A** - Object Oriented Programming (4.00)  
--- And ---  
**CSS 2B** - Data Structures and Algorithms (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)



**GEL 1** - 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)



**MAT 3A** - Analytic Geometry and Calculus I (4.00)  
--- And ---  
**MAT 3B** - Analytic Geometry and Calculus II (4.00)

**MATH 150A** - Calculus I (4.00)  
--- And ---  
**MATH 150B** - Calculus II (4.00)  
--- And ---  
**MATH 250A** - Calculus III (4.00)



**MAT 3A** - Analytic Geometry and Calculus I (4.00)  
--- And ---  
**MAT 3B** - Analytic Geometry and Calculus II (4.00)  
--- And ---  
**MAT 3C** - Analytic Geometry and Calculus III (4.00)

**PHYS 225** - Fundamental Phys; Mechanics (3.00)  
--- And ---  
**PHYS 225L** - Fundamental Physics Lab (1.00)



**PHY 4A** - General Physics I/ Mechanics (4.00)

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

--- **And** ---

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



**PHY 4B** - General Physics II/ Electricity and Magnetism (4.00)

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

--- **And** ---

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



**PHY 4C** - General Physics III/ Waves, Heat, Light, Sound and Modern Physics (4.00)

**END OF AGREEMENT**