# Articulation Agreement by Major

*Effective during the 2022-2023 Academic Year*

| To: California State University, Fullerton<br>2022-2023 General Catalog, Semester | From: Copper Mountain College<br>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.

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### LOWER DIVISION CORE

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

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| **CPSC 120** - Introduction to Programming (3.00) | ← | No Course Articulated |
| **CPSC 121** - Object-Oriented Programming (3.00) | ← | **CS 089** - C++ Programming I (3.00) |
| **CPSC 131** - Data Structures (3.00) | ← | **CS 089A** - C++ Programming II (3.00) |
| **CPSC 240** - Computer Organization & Assembly Language (3.00) | ← | **CS 087** - Assembler Language Programming (3.00) |
| **CPSC 253** - Cybersecurity Foundations and Principles (3.00) | ← | No Course Articulated |

#### --- And ---

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

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| **CPSC 223C** - C Programming (3.00) | ← | No Course Articulated |
| **CPSC 223J** - Java Programming (3.00) | ← | No Course Articulated |
| **CPSC 223N** - Visual C# Programming (3.00) | ← | No Course Articulated |
| **CPSC 223P** - Python Programming (3.00) | ← | No Course Articulated |

### MATHEMATICS REQUIREMENTS

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

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| **MATH 150A** - Calculus I (4.00) | ← | **MATH 001A** - Calculus (4.00) |
| **MATH 150B** - Calculus II (4.00) | ← | **MATH 001B** - Calculus (4.00) |

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| **MATH 170A** - Mathematical Structures I (3.00) | ← | **MATH 004** - Discrete Structures (3.00) |
| **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) | ← | **BI 004** - Elements of Biology (3.00) |
| **BIOL 101L** - Elements of Biology Laboratory (1.00) | ← | **BI 004L** - Elements of Biology Laboratory (1.00) |
| **BIOL 151** - Cellular & Molecular Biology (4.00) | ← | **BI 005** - Molecular and Cellular Biology (5.00) |
| **BIOL 152** - Evolution & Organismal Biology (4.00) | ← | **BI 006** - Biology of Organisms (5.00) |

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|---|---|---|
| **CHEM 120A** - General Chemistry (5.00) | ← | **CH 001A** - General Chemistry (5.00) |
| **CHEM 120B** - General Chemistry (5.00) | ← | **CH 001B** - General Chemistry (5.00) |
| **CHEM 123** - Chemistry for Engineers (3.00) | ← | No Course Articulated |
| **CHEM 125** - Gen Chemistry B Lecture (3.00) | ← | No Course Articulated |

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|---|---|---|
| **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 |

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|---|---|---|
| **MATH 250A** - Calculus III (4.00) | ← | **MATH 002A** - Multivariate Calculus (5.00) |
| **MATH 250B** - Intro to Linear Algebra and Diff. Equations (4.00) | ← | **MATH 002B** - Linear Algebra (4.00) <br> --- And --- <br> **MATH 002C** - Ordinary Differential Equations (4.00) |

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| **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

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

## REQUIRED FOR GRADUATION

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| **POSC 100** - American Government (3.00) | ← | **PS 001** - Introduction to Government (3.00) |

## ARTICULATION DETAILS

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|---|---|---|
| **BIOL 101** - Elements of Biology (3.00) <br> --- And --- <br> **BIOL 101L** - Elements of Biology Laboratory (1.00) | ← | **BI 004** - Elements of Biology (3.00) <br> --- And --- <br> **BI 004L** - Elements of Biology Laboratory (1.00) |
| **BIOL 151** - Cellular & Molecular Biology (4.00) <br> --- And --- <br> **BIOL 152** - Evolution & Organismal Biology (4.00) | ← | **BI 005** - Molecular and Cellular Biology (5.00) <br> --- And --- <br> **BI 006** - Biology of Organisms (5.00) |

| Sending Institution | | Receiving Institution |
|---|---|---|
| **CHEM 120A** - General Chemistry (5.00) <br> --- And --- <br> **CHEM 120B** - General Chemistry (5.00) | ← | **CH 001A** - General Chemistry (5.00) <br> --- And --- <br> **CH 001B** - General Chemistry (5.00) |
| **CHEM 120A** - General Chemistry (5.00) <br> --- And --- <br> **CHEM 125** - Gen Chemistry B Lecture (3.00) | ← | No Course Articulated |

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|---|---|---|
| **CPSC 120** - Introduction to Programming (3.00) <br> --- And --- <br> **CPSC 121** - Object-Oriented Programming (3.00) <br> --- And --- <br> **CPSC 131** - Data Structures (3.00) | ← | No Course Articulated |
| **CPSC 253U** - Workshop In Unix (1.00) <br> --- And --- <br> **CPSC 254** - Software Development with Open Source Systems (3.00) | ← | No Course Articulated |

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|---|---|---|
| **GEOL 101** - Introduction to Geology (3.00) <br> --- And --- <br> **GEOL 101L** - Introduction to Geology Laboratory (1.00) | ← | **G 001** - Physical Geology (4.00) |
| **GEOL 201** - Earth History (3.00) <br> --- And --- <br> **GEOL 201L** - Earth History Supplemental Lab (1.00) | ← | No Course Articulated |

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|---|---|---|
| **MATH 150A** - Calculus I (4.00) <br> --- And --- <br> **MATH 150B** - Calculus II (4.00) | ← | **MATH 001B** - Calculus (4.00) <br> --- And --- <br> **MATH 001A** - Calculus (4.00) |
| **MATH 150A** - Calculus I (4.00) <br> --- And --- <br> **MATH 150B** - Calculus II (4.00) <br> --- And --- <br> **MATH 250A** - Calculus III (4.00) | ← | **MATH 001A** - Calculus (4.00) <br> --- And --- <br> **MATH 001B** - Calculus (4.00) <br> --- And --- <br> **MATH 002A** - Multivariate Calculus (5.00) |

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|---|---|---|
| **PHYS 225** - Fundamental Phys; Mechanics (3.00) <br> --- And --- <br> **PHYS 225L** - Fundamental Physics Lab (1.00) | ← | **PH 004A** - Physics for Scientists and Engineers (4.00) |
| **PHYS 226** - Fund Phys.Elect + Magnetism (3.00) <br> --- And --- <br> **PHYS 226L** - Fundamental Physics Lab (1.00) | ← | **PH 004B** - Physics for Scientists and Engineers (4.00) |
| **PHYS 227** - Fund Phys: Waves, Optics, & Mod Phys (1.00 - 3.00) <br> --- And --- <br> **PHYS 227L** - Fundamental Physics Lab (1.00) | ← | No Course Articulated |

**END OF AGREEMENT**