

# Articulation Agreement by Major

Effective during the 2022-2023 Academic Year

To: University of California, Riverside  
2022-2023 General Catalog, Quarter

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

## Computer Science, B.S.

### GENERAL REQUIREMENTS

All majors in the Bourns College of Engineering are selective, based on academic preparation and GPA in all transferable coursework, with a minimum GPA of 2.80. This is a baseline GPA for consideration and not a guarantee of admission.

**Prior to transfer, a minimum GPA of at least 2.50 in the calculus sequence and at least one additional sequence.**

Note: Proficiency in C++ is a required prerequisite to UCR's CS141 "Intermediate Data Structures and Algorithms", as well as most other upper division CS courses. Transfer students who complete the equivalent of UCR's CS 10 and 12 but still lack proficiency in C++ may be required to complete a C++ course at UCR or elsewhere, prior to enrolling in upper division courses at UCR.

#### AP Exam - Satisfy Course Requirement Section

##### Computer Science: A Exam

Minimum score of 4 satisfies CS 10A

##### Mathematics: AB Exam or AB Subscore from BC Exam

Minimum score of 3 satisfies MATH 9A or MATH 7A

##### Mathematics: BC Exam

Minimum score of 3 satisfies MATH 9A and MATH 9B or MATH 7A and MATH 7B

Minimum score of 4 satisfies MATH 9A, MATH 9B, MATH 9C or MATH 7A, MATH 7B, MATH 9C

If the sending institution offers honors courses, the articulation for the same course number will be used.

For more information regarding this major and UCR's transfer selection process, please visit [Bourns College of Engineering General Requirements](#).

For information about the UC Transfer Admission Guarantee (TAG) program, please visit [Transfer Admission Guarantee](#).

#### IGETC and General Education/Breadth Information

The Bourns College of Engineering (BCOE) accepts completion of IGETC as satisfying the college's lower division general education/breadth requirements for transfer students. Additional upper division breadth requirements may be required after enrollment in BCOE. Please visit "[GE Areas - Transfer Institution](#)" for the complete list of required GE/Breadth Articulation Agreement. For more information on BCOE breadth requirements, go to [Bourns College of Engineering Breadth Requirements](#). Prospective applicants are strongly encouraged to focus instead on preparatory course work for the major, such as the mathematics, science and other technical preparatory course work listed below, rather than IGETC. Strong technical preparation is essential for success in the admissions process, and subsequently, in all coursework at BCOE.

### LOWER DIVISION MAJOR REQUIREMENTS

Required for admission  
All courses in this section are required

**CS 10A** - Intro to Computer Science for Science, Mathematics, and Engineering I (4.00)

- An AP exam may be used to satisfy this course requirement

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

--- Or ---

**CS 003B** - Fundamentals of Computer Science (JAVA) (4.00)

--- Or ---

**CS 003C** - Fundamentals of Computer Science (Python) (4.00)

--- Or ---

**CIS 016** - Java Programming (3.00)

**CS 10B** - Intro to Computer Science for Science, Mathematics, and Engineering II (4.00)

← **CIS 014** - C++ Programming (3.00)

--- Or ---

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

**MATH 9A** - First-Year Calculus (4.00)

--- And ---

**MATH 9B** - First-Year Calculus (4.00)

--- And ---

**MATH 9C** - First-Year Calculus (4.00)

- An AP exam may be used to satisfy this course requirement

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

--- And ---

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

**PHYS 40A** - General Physics (5.00)

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

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

### Select 3 Course(s) from the following

#### Required for admission

<b>CS 11</b> - Intro to Discrete Structures (4.00) Same-As: MATH 11	← <b>CS 045</b> - Discrete Structures with Computer Science Applications (5.00)
	<b>--- Or ---</b>
	<b>MATH 022</b> - Discrete Mathematics (4.00)
<b>CS 10C</b> - Intro to Data Structures and Algorithms (4.00)	← <b>CS 008</b> - Fundamentals of Computer Science III-Data Structures (4.00)
<b>CS 61</b> - Machine Organization and Assembly Language Programming (4.00)	← <b>CS 066</b> - Assembly Language Programming for the Sciences and Mathematics (4.00)
<b>MATH 10A</b> - Calculus of Several Variables (4.00)	← <b>MATH 005C</b> - Multivariable Calculus (5.00)
<b>PHYS 40B</b> - General Physics (5.00)	← <b>PHYS 001B</b> - General Physics (5.00)
	<b>--- Or ---</b>
	<b>PHYS 008A</b> - Physics for Scientists and Engineers I: Mechanics (5.00)
	<b>--- And ---</b>
	<b>PHYS 008B</b> - Physics for Scientists and Engineers II: Waves, Electricity & Magnetism (5.00)
	<b>--- And ---</b>
	<b>PHYS 008C</b> - Physics for Scientists and Engineers III: Thermodynamics, Optics, and Modern Physics (5.00)
<b>PHYS 40C</b> - General Physics (5.00)	← <b>PHYS 001C</b> - General Physics (5.00)
	<b>--- Or ---</b>
	<b>PHYS 008B</b> - Physics for Scientists and Engineers II: Waves, Electricity & Magnetism (5.00)

### STRONGLY RECOMMENDED COURSES

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

#### Recommended

<b>EE 20B</b> - Linear Methods for Engineering Analysis and Design Using MATLAB (4.00)	← No Course Articulated
<b>MATH 31</b> - Applied Linear Algebra (5.00)	← <b>MATH 010</b> - Linear Algebra and Applications (4.00)

**END OF AGREEMENT**