

# SOFTWARE DEVELOPMENT, ASSOCIATE IN ARTS DEGREE

Banner Code: 2\_AA\_CSSD

Control Number: 19852

Financial Aid Eligible

The Software Development program at Golden West College is designed to provide formal training for individuals who seek entry into the rapidly growing fields of computer software engineering, systems analysis, application development, and systems software. Students utilize the latest tools to learn programming languages, algorithms, operating system environments, and web-based multi-user application architectures. Classes are conducted in smart classrooms with the latest instructional tools. Sizable projects are undertaken in each class providing the students with an opportunity to add the projects to their portfolios, and knowledge to their skill sets.

Students can apply the skills they learn through this program, to: general computing (corporate applications, databases, web applications); entertainment media development (3-D computer animation for video games and movies); engineering applications (computer-aided manufacturing, robotics, and product simulations); and emerging technologies (artificial intelligence, urban simulation, augmented reality, and biotechnology process simulation).

## Program Level Learning Outcomes

Upon completion of this program, students will be able to:

1. Understand computer programming using Microsoft programming languages and operating systems environments.
2. Design and build single-user applications.
3. Design and build multi-user web-based applications.
4. Design and build single-user database environments.
5. Design and build multi-user database environments.

Review Graduation Requirements (<https://catalog.cccd.edu/golden-west/graduation-requirements/associate-degree/>) and General Education (<https://catalog.cccd.edu/golden-west/general-education/>).

Course	Title	Units
<b>Required Courses</b>		
CS G175	C++ Programming 1	3
CS G102	Computer Software Development, Introduction	4
CS G189	C++ Programming 2	3
CS G178	Visual C# .Net	4
CS G196	Web Programming With .NET	4
<b>Major Total</b>		<b>20</b>
<b>GE Pattern (Local, CSU GE-Breadth, or IGETC)</b>		<b>18-39</b>
<b>Total Units</b>		<b>60</b>

## Recommended Program Sequence

These sequences are general course maps for students to finish all major and general education requirements for two-year completion of degrees, completion of short-term certificates, and/or fulfillment of transfer requirements. However, this may not be an appropriate

path for all students. The two-year sequence is based on English and Math placement and meeting other course prerequisites. **Students are advised to meet with a GWC Counselor to review course selections and sequences to ensure that completion of this program will meet a student's transfer and career goals.**

### Year 1:

Course	Title	Units
<b>Semester 1</b>		
CS G102	Computer Software Development, Introduction	4
ENGL G100	Freshman Composition <sup>^</sup>	4
Area E: Lifelong Understanding and Self-Development or Area A: English Language, Area B: Natural Sciences, Area C: Arts & Humanities, Area D: Social & Behavioral Sciences		3
Elective coursework for a total of 6 units		6
<b>Units</b>		<b>17</b>

Course	Title	Units
<b>Semester 2</b>		
CS G175	C++ Programming 1	3
Area C: Arts & Humanities course		3
Elective coursework for a total of 3 units		3
<i>Select one of the following or satisfy Math competency (completion of Algebra 2 in High School with a "C" or better):</i>		
MATH G030	Intermediate Algebra	4
MATH G040	Accelerated Elementary and Intermediate Algebra	5
MATH G080	Pre-Statistics	5
If Math competency is satisfied, take Elective coursework for a total of 3 units.		3
<b>Units</b>		<b>13-15</b>

### Year 2:

Course	Title	Units
<b>Semester 3</b>		
CS G189	C++ Programming 2	3
CS G178	Visual C# .Net	4
Area B: Natural Sciences course		3
Area D: Social & Behavioral Sciences course		3
<b>Units</b>		<b>13</b>
<b>Semester 4</b>		
CS G196	Web Programming With .NET	4
Cultural Diversity requirement <sup>#</sup>		3
Elective coursework to reach a minimum of 60 units		7-9
<b>Units</b>		<b>14-16</b>
<b>Total minimum units required</b>		<b>60</b>

<sup>^</sup> Program sequence may not be recommended for students who self-place into ENGL G100S. Students should see a Counselor for appropriate advisement.

<sup>#</sup> Cultural Diversity requirement (<https://catalog.cccd.edu/golden-west/general-education/associate-degree/>) list of approved courses