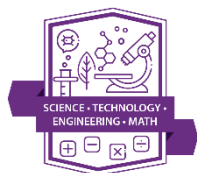


# 26-27 Cert. Computational Biology (CBIO)

## ABOUT THIS MAJOR



Computational Biology uses data analysis, mathematical modeling, and computational simulation techniques to understand complex biological systems. The Computational Biology certificate provides coursework designed to train students entering careers that require the interpretation and analysis of large amounts of biological data. The objective of the certificate is to acquire skills in computer science, biology and statistics

that can be applied to bioinformatics. Students may also wish to obtain the Associate in Science in Biology degree (AS or AS-T), which can be used to transfer to a university for a BA/BS degree in Computational Biology, Biotechnology, Bioinformatics, or related field. For more information, visit [the Math and Science division](#).

### TO EARN A DEGREE A STUDENT MUST COMPLETE THE FOLLOWING:

- [1] Completion of Major & Program Electives Courses
- [2] Minimum grade point average of 2.0
- [3] A C or better in all courses required for the major

### Cert.- Computational Biology (CBIO)

[Total Units Required for the Major 23]

| Required Courses (Total 10 units)                                                                                                                                                                                           |   |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| BIOL110 - General Molecular Cell Biology<br><small>Prerequisite: Completion of Intermediate Algebra or higher or placement by multiple measures and completion of or concurrent enrollment in CHEM 110 or CHEM 110H</small> | 5 |
| CS110 - Introduction to Programming Concepts and Methodologies                                                                                                                                                              | 3 |

| Chemistry Program Elective: Choose one (Total 5 units)                                                                                                           |   |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| CHEM110 or CHEM 110H - General Chemistry/ Honors<br><small>Prerequisite: Completion of Intermediate Algebra or higher or placement by multiple measures.</small> | 5 |

| Statistics Course: Choose one (Total units)                                                                                                                                                                                                    |   |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| MATH116 - Introduction to Statistics Using R<br><small>Prerequisite: Completion of Intermediate Algebra or higher or placement by multiple measures.</small>                                                                                   | 4 |
| STATC1000 - Introduction to Statistics<br><small>Prerequisite: Placement as determined by the college's multiple measures assessment process or completion of a course taught at or above the level of intermediate algebra.</small>           | 4 |
| STATC1000H - Introduction to Statistics - Honors<br><small>Prerequisite: Placement as determined by the college's multiple measures assessment process or completion of a course taught at or above the level of intermediate algebra.</small> | 4 |

| Skill Courses : Complete all the following (Total 6 units)                        |   |
|-----------------------------------------------------------------------------------|---|
| CS122 - Programming and Algorithms in Python                                      | 3 |
| BIOL206 - Introduction to Bioinformatics<br><small>Prerequisite: BIOL 110</small> | 3 |

## RECOMMENDED PATHWAY

### Cert. COMPUTATIONAL BIOLOGY

The Recommended Plan of Study is determined by the discipline faculty. Take classes in **Summer** or **Interession** if needed to complete your degree in a timely manner!

Fall/Spring: Max 19 units | Summer: Max 9 units | Interession: Max 6 units

| SEMESTER 1            |       |
|-----------------------|-------|
| Course                | Units |
| CS 110                | 3     |
| BIOL 110              | 5     |
| CHEM 110 OR CHEM 110H | 5     |
| Total Units           | 13    |

| SEMESTER 2                          |       |
|-------------------------------------|-------|
| Course                              | Units |
| Math 116 or STATC1000 OR STATC1000H | 4     |
| Total Units                         | 4     |

| SUMMER 1    |       |
|-------------|-------|
| Course      | Units |
| CS 122      | 3     |
| BIOL 206    | 3     |
| Total Units | 6     |

### Counseling Notes

**CHEM 110 :** To succeed in CHEM 110, students are required to successfully complete CHEM 101 or one year of High School Chemistry. Algebra is used extensively to solve problems involving quantities.

**HONORS COURSES:** CHEM 110, MATH 150

Students may take either CHEM 110 , MATH 150 or CHEM 110H, MATH 150H. Duplicate credit will not be awarded. This honors course is intended for students in the Honors Transfer Program. For more information about Honors Transfer Alliance Program visit: <https://www.avc.edu/academics/programs-and-pathways/honors>

### COUNSELING NOTE SECTION

**Prerequisite:** If a course is listed as a prerequisite for another course, that prerequisite course must be completed with a satisfactory grade to enroll in the next course. A satisfactory grade is a grade of "A," "B," "C" or "P". Students who enroll in classes for which they do not meet the prerequisites will be involuntarily dropped. Students will be notified of this involuntary drop. Title 5, Section 55200(d)

#### Application for Graduation:

Antelope Valley College awards degrees three times annually following the Fall, Spring, and summer semesters. Students must apply for graduation to earn their degree or certificate. Applications are due by September 6 for spring/summer graduates and by February 14 for fall graduates.

AVC 26-27 CATALOG: [ACADEMIC POLICIES](#)

#### INFORMATION and RESOURCES

|                     |                                      |                             |
|---------------------|--------------------------------------|-----------------------------|
| Tutoring Assistance | Career Center                        | AVC Student Health Services |
| Transfer Center     | Office of Students with Disabilities | Palmdale Center             |
| Basic Needs         | Financial Aid                        | Counseling Division         |