

# UCLA COMPUTING SPECIALIZATION 2020-2021

**COMPUTING SPECIALIZATION:** This computing specialization is designed for students who are interested in adding computer programming and computational chemistry to their Chemistry or Biochemistry degree. Refer to the UCLA General Catalog ([www.registrar.ucla.edu/catalog](http://www.registrar.ucla.edu/catalog)) for course descriptions and requisites. For more details about this specialization offered in the Department of Chemistry and Biochemistry, consult the Undergraduate Office in Young Hall 4006.

Specialization Requirements	
Major Requirements	Satisfy all the requirements for a bachelor's degree in the specified major within the Chemistry and Biochemistry department.
Program in Computing (PIC)	10A, 10B
Program in Computing (PIC) Elective (Choose one)	10C, 15, 16A, 20A, 30, 40A, 60
Chemistry (Chem) (8 units)	125, C126A, C145, CM160A, CM160B

## Important Notes

- Courses must be completed with a combined GPA of at least 2.0.
- Students must petition for admission to this program AFTER they complete Programming in Computing 10A and 10B.
- Petitions should be filed in the Undergraduate Office in 4006 Young Hall.
- Students graduate with a bachelor's degree in their major and a specialization in computing.
- Program In Computing courses are offered through the Mathematics Department

## Course Information

Course	Course Title	Prerequisite(s)
<b>Program In Computing</b>		
10A	Intro to Programming	None (PIC 1 if no prior computing experience)
10B	Intermediate Programming	PIC 10A
10C	Advanced Programming	PIC 10B
15	Intro to Lisp and Symbolic Computation	PIC 10A
16A	Python with Applications I	PIC 10A
20A	Principles of Java Language with Applications	PIC 10A
30	Machine Organization and Assembly Language Programming	PIC 10B
40A	Intro to Programming for the Internet	PIC 10A (10B)
60	Data Structures and Algorithms	PIC 10B; Math 31A, 31B, 61
<b>Chemistry</b>		
125	Computers in Chemistry	Chem 110A; Chem 113A
C126A	Computational Methods for Chemists	Chem 110A; Chem 113A; Math 33A
C145	Theoretical and Computational Organic Chemistry	Chem 30C, 113A
CM160A	Intro to Bioinformatics	[Biostats 100A <u>OR</u> Civil Engineering 110 <u>OR</u> Electrical Engineering 131A <u>OR</u> Math 170A <u>OR</u> Stats 100A]; [CompSci 32 <u>OR</u> PIC 10C] with grades of C- or better
CM160B	Algorithms in Bioinformatics	[Biostats 100A <u>OR</u> Civil Engineering 110 <u>OR</u> Electrical Engineering 131A <u>OR</u> Math 170A <u>OR</u> Stats 100A]; [CompSci 32 <u>OR</u> PIC 10C] with grades of C- or better. (Course CM160A is not requisite to CM160B)

( ) recommended courses

[ ] pick one course enclosed in brackets

Updated 9/30/2020