

**COMPUTATIONAL & SYSTEMS BIOLOGY (CaSB) MAJOR CURRICULUM** *(pending approval Winter 22 and forward)*

**LOWER DIVISION REQUIREMENTS:**

<b>Life Sciences</b> 7A, 7B, 7C
<b>Chemistry</b> 14A, 14B, 14BL <b>OR</b> 20A, 20B, 20L
<b>Physics</b> 5A, 5B, 5C <b>OR</b> 1A, 1B, 1C
<b>Calculus &amp; Statistics Series – Option #1:</b> Mathematics 31A, 31B, 33A, 33B, Statistics 10
<b>Calculus &amp; Statistics Series – Option #2:</b> Life Sciences 30A, 30B, C&S BIO M32, Mathematics 33A, 33B, Life Sciences 40
<b>Computer Science</b> (COM SCI) 31 <b>OR</b> Program in Computing (COMPTNG) 10A
<b>ADDITIONAL PREP:</b> <b>Bioinformatics Track:</b> must also complete Computer Science 32; <b>OR</b> Program in Computing 10B and 10C, but these do not have to be completed prior to admission into the major.  <b>Biological Data Sciences Track:</b> must also complete Computer Science 32, but this does not have to be completed prior to admission into the major. MATH 61 and/or MATH 115A are also recommended pre-reqs for this track depending on chosen track courses.  <b>Dynamical Modeling Track:</b> MATH 32A is a recommended pre-req depending on chosen track courses.  <b>All Tracks:</b> LIFESCI 23L and/or CHEM 14C/30A are recommended pre-reqs depending on chosen Life Science courses.  <b>NOTE:</b> Additional pre-reqs (beyond the required and recommended courses above) may be required for certain track courses. Students should check pre-reqs on the Schedule of Classes.

**METHODOLOGY CORE UPPER DIVISION REQUIREMENTS: (7 courses total)**

<b>Gateway I</b> – Intro & Survey – C&S BIO/COM SCI/BIOENGR M184
<b>Gateway II</b> – Research Topics – C&S BIO 185
<b>Probability</b> – STATS 100A <b>OR</b> MATH 170E <b>OR</b> EC ENGR 131A
<b>Statistics</b> – STATS 100B <b>OR</b> BIOSTATS 100A
<b>Biological Modeling</b> – C&S BIO M150
<b>Capstone Series (2 courses, pick one series)</b> – <b>Option #1:</b> C&S BIO 199 and M187; <b>Option #2:</b> C&S BIO 198A and 198B**; <b>Option #3:</b> C&S BIO 195 and M187

\*\*Students admitted to the *major* prior to Fall 2020 are required to complete just one course: C&S BIO M187

**TRACK REQUIREMENTS: (5 upper division courses; one track must be declared when admitted to the major)**

<b>Bioinformatics Track</b>	<b>1 Course from</b> COM SCI CM121; COM SCI CM122; COM SCI CM124 <b>2 Courses from</b> COM SCI CM121; COM SCI CM122; COM SCI CM124; EE BIOL C135; MCD BIO CM156; MCD BIO 187AL; PHYSCI 125; STATS M254 <b>2 Courses from list of Life Science courses (see below)</b>
<b>Biological Data Sciences Track</b>	<b>3 Courses from</b> COM SCI CM124 <b>OR</b> COM SCI M226; COM SCI M146 <b>OR</b> STATS C161 <b>OR</b> MATH 156; COM SCI 161; COM SCI 168; COM SCI 180 <b>OR</b> MATH 182; EC ENGR C143A; EC ENGR C147; MATH 155; MATH 164; STATS 101A; STATS 101C <b>At most two courses may be from Mathematics</b> <b>2 Courses from list of Life Science courses (see below)</b>
<b>Dynamical Modeling Track</b>	<b>3 Courses from</b> C&S BIO M186 <b>OR</b> COM SCI M182; EC ENGR 102; EC ENGR 113; EE BIOL C119A; EE BIOL C119B; MATH 134 <b>OR</b> MATH 135; MATH 136; MATH 142; MATH 146; MATH 168; MATH 171 <b>At most two courses may be from Mathematics</b> <b>2 Courses from list of Life Science courses (see below)</b>

<b>Life Science Courses (select any two; courses can be from different areas)</b>	
<b>Biochemistry</b>	CHEM 153A; CHEM 153B
<b>Ecology</b>	EE BIOL 100; EE BIOL 116; EE BIOL 120; EE BIOL 129; EE BIOL 161; EE BIOL C172; EE BIOL C174

<b>Epidemiology</b>	EPIDEM 100; MIMG 101; MIMG 102; MIMG 168; MIMG C185A
<b>Genetics &amp; Molecular Biology</b>	LIFESCI 107; MCD BIO 138; MCD BIO 140; MCD BIO 144; MCD BIO 165A OR 100
<b>Neurosystems</b>	NEUROSC M101A OR PSYCH 115; NEUROSC M101B; NEUROSC 102; NEURO 205; NEURO 260; PHYSCI C144; PHYSICS C186; PSYCH 119M
<b>Physiology</b>	BIOENGR C102; BIOMATH 206; EE BIOL 170 OR PHYSCI 166; PHYSCI 149

**Admission to the Pre-Major:**

- Current UCLA students who were admitted as Freshmen or Transfer Students\* can request to declare the pre-major once they have met the following requirements:
  - Completed one quarter at UCLA
  - Are in good academic standing
  - Have a cumulative GPA of a 2.0 or better
  - Have established a minimum pre-major GPA of a 2.7 by taking at least one pre-major course at UCLA for a letter grade

\*Transfer students: must have been admitted to UCLA under the Division of Life Sciences.
- All requests to declare the pre-major must be sent via email to [casb@lifesci.ucla.edu](mailto:casb@lifesci.ucla.edu). Please include the following information in your email:
  - Full name
  - UID
  - Formal statement requesting to declare the pre-major
  - Approval to be added to the CaSB Undergraduate listserv
- NOTE:
  - Please allow 7 – 10 business days for review. If a student does not meet the requirements to declare the pre-major, there will not be an option to petition the decision.
  - All courses for the pre-major must be completed with a grade of C or better.
  - Students are allowed to repeat up to two pre-major courses. Those who receive 3 grades of a C- or below in pre-major courses (either different courses or multiple repeats of the same course) are dismissed from the program.

**Admission to the Major:**

- Once students have completed all of the pre-major coursework, they must submit an application to be entered into the major.
- Students must submit the completed application to the [casb@lifesci.ucla.edu](mailto:casb@lifesci.ucla.edu). Please allow 7 – 10 business days for review. If a student does not meet all of the requirements to officially be entered into the major, they will need to petition by attaching a written statement addressing the circumstances that led to not being able to meet the minimum requirements. Students will be notified via email of the decision.
- Effective Fall 2020, students will need to meet the following eligibility requirements to be admitted to the major:
  - Minimum 2.7 GPA in all pre-major courses
  - Minimum grade of C or better in all pre-major courses
  - Have a cumulative GPA of a 2.0 or better
  - Completion of all pre-major courses with a C or better

**Honors Program:**

- Students with a grade-point average of 3.5 or better in required major courses and a 3.0 cumulative GPA may apply for admission to the honors program. Honors or highest honors may be granted at the discretion of the faculty sponsor and the faculty committee to students demonstrating exceptional ability on the senior research thesis.

***IT IS YOUR RESPONSIBILITY TO BE AWARE OF THE REQUIREMENTS LISTED ON YOUR DEGREE AUDIT REPORT (DAR) AND TO VERIFY THAT IT IS UP TO DATE.***

***FOR FURTHER ASSISTANCE, PLEASE GO TO THE UNDERGRADUATE ADVISING OFFICE: 102 HERSHEY HALL***

[casb@lifesci.ucla.edu](mailto:casb@lifesci.ucla.edu)