

Comparative Biochemistry

The interdisciplinary Graduate Group in Comparative Biochemistry administers the PhD degree for students interested in a biochemical and molecular approach to problems in the biological sciences. Students work under the supervision of faculty from diverse disciplines including Molecular and Cell Biology; Nutritional Science and Toxicology; Plant and Microbial Biology; Chemistry; Chemical Engineering; Environmental Science, Policy, and Management; Public Health; and the Lawrence Berkeley National Laboratory.

Admission to the University

Uniform minimum requirements for admission

The following minimum requirements apply to all programs and will be verified by the Graduate Division:

1. A bachelor's degree or recognized equivalent from an accredited institution;
2. A minimum grade-point average of B or better (3.0);
3. If the applicant comes from a country or political entity (e.g. Quebec) where English is not the official language, adequate proficiency in English to do graduate work, as evidenced by a TOEFL score of at least 570 on the paper-and-pencil test, 230 on the computer-based test, 90 on the iBT test, or an IELTS Band score of at least 7 (note that individual programs may set higher levels for any of these); and
4. Enough undergraduate training to do graduate work in the given field.

Applicants who already hold a graduate degree

The Graduate Council views academic degrees as evidence of broad research training, not as vocational training certificates; therefore, applicants who already have academic graduate degrees should be able to take up new subject matter on a serious level without undertaking a graduate program, unless the fields are completely dissimilar.

Programs may consider students for an additional academic master's or professional master's degree if the additional degree is in a distinctly different field.

Applicants admitted to a doctoral program that requires a master's degree to be earned at Berkeley as a prerequisite (even though the applicant already has a master's degree from another institution in the same or a closely allied field of study) will be permitted to undertake the second master's degree, despite the overlap in field.

The Graduate Division will admit students for a second doctoral degree only if they meet the following guidelines:

1. Applicants with doctoral degrees may be admitted for an additional doctoral degree only if that degree program is in a general area of knowledge distinctly different from the field in which they earned their original degree. For example, a physics PhD could be admitted to a doctoral degree program in music or history; however, a student with a doctoral degree in mathematics would not be permitted to add a PhD in statistics.

2. Applicants who hold the PhD degree may be admitted to a professional doctorate or professional master's degree program if there is no duplication of training involved.

Applicants may only apply to one single degree program or one concurrent degree program per admission cycle.

Any applicant who was previously registered at Berkeley as a graduate student, no matter how briefly, must apply for readmission, not admission, even if the new application is to a different program.

Required documents for admissions applications

1. **Transcripts:** Upload unofficial transcripts with the application for the departmental initial review. Official transcripts of all college-level work will be required **if admitted**. Official transcripts must be in sealed envelopes as issued by the school(s) you have attended. Request a current transcript from every post-secondary school that you have attended, including community colleges, summer sessions, and extension programs. If you have attended Berkeley, upload unofficial transcript with the application for the departmental initial review. Official transcript with evidence of degree conferral **will not** be required if admitted.
2. **Letters of recommendation:** Applicants can request online letters of recommendation through the online application system. Hard copies of recommendation letters must be sent directly to the program, not the Graduate Division.
3. **Evidence of English language proficiency:** All applicants from countries in which the official language is not English are required to submit official evidence of English language proficiency. This requirement applies to applicants from Bangladesh, Burma, Nepal, India, Pakistan, Latin America, the Middle East, the People's Republic of China, Taiwan, Japan, Korea, Southeast Asia, and most European countries. However, applicants who, at the time of application, have already completed at least one year of full-time academic course work with grades of B or better at a U.S. university may submit an official transcript from the U.S. university to fulfill this requirement. The following courses will not fulfill this requirement: 1) courses in English as a Second Language, 2) courses conducted in a language other than English, 3) courses that will be completed after the application is submitted, and 4) courses of a non-academic nature. If applicants have previously been denied admission to Berkeley on the basis of their English language proficiency, they must submit new test scores that meet the current minimum from one of the standardized tests.

Normative Time Requirements

Normative time is defined as the elapsed time in years that under normal circumstances would be needed to complete all requirements for the PhD degree assuming that the student engaged in full-time, uninterrupted study and is making desirable progress toward the degree. Normative time for Comparative Biochemistry is five years.

Time to Advancement

Curriculum

Courses Required

Advanced Biochemistry/Molecular Biology:

MCELLBI 110	Molecular Biology: Macromolecular Synthesis and Cellular Function	4
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MCELLBI 200A	Fundamentals of Molecular and Cell Biology	3
Enzymes/Metabolism/Cell Biology/Plant Microbial Biology:		
PLANTBI 200A	Plant Developmental Genetics	1.5
NUSCTX 250	Advanced Topics in Metabolic Biology	3
MCELLBI C214	Protein Chemistry, Enzymology, and Bio-organic Chemistry	2
MCELLBI 230	Advanced Cell Biology	4
Physical Biochemistry:		
MCELLBI 206	Physical Biochemistry	3
CHEM 270A/270B	Advanced Biophysical Chemistry I	1
COMPBIO 294	Comparative Biochemistry Seminar	1
Grad Elective Courses per approved study list		
Grad Elective Seminar per approved study list		
COMPBIO 299	Graduate Research	1-12

Comparative Biochemistry

COMPBIO 294 Comparative Biochemistry Seminar 1 Unit

The objective of this course is to provide an overview of the research activities conducted by faculty members of the Graduate Group in Comparative Biochemistry. The lectures will cover a wide range of interdisciplinary research topics reflecting the breadth of the Group. An important goal of this course is to enhance intellectual and collaborative interactions between students and faculty of the Graduate Group by increasing awareness of the range of research projects. The course will be conducted in a seminar format and is required for students new to the Graduate Group. It is also recommended for advanced students currently in the Group.

Rules & Requirements

Repeat rules: Course may be repeated for credit. Course may be repeated for credit when topic changes.

Hours & Format

Fall and/or spring: 15 weeks - 1 hour of seminar per week

Additional Details

Subject/Course Level: Comparative Biochemistry/Graduate

Grading: Offered for satisfactory/unsatisfactory grade only.

COMPBIO 299 Graduate Research 1 - 12 Units
Graduate student research.

Rules & Requirements

Prerequisites: Graduate standing in the Comparative Biochemistry Graduate Group

Repeat rules: Course may be repeated for credit. Course may be repeated for credit when topic changes.

Hours & Format

Fall and/or spring: 15 weeks - 1-12 hours of independent study per week

Summer:

6 weeks - 2.5-30 hours of independent study per week

8 weeks - 1.5-22.5 hours of independent study per week

Additional Details

Subject/Course Level: Comparative Biochemistry/Graduate

Grading: Letter grade.