

Metabolic Biology

The Metabolic Biology MS and PhD programs provide interdisciplinary training in the areas that include metabolic regulation, physiological chemistry, nutrient functions, and diseases related to metabolic disorders such as diabetes and cancer.

Admission to the University

Minimum Requirements for Admission

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

1. A bachelor's degree or recognized equivalent from an accredited institution;
2. A grade point average of B or better (3.0);
3. If the applicant has completed a basic degree 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 90 on the iBT test, 570 on the paper-and-pencil test, or an IELTS Band score of at least 7 on a 9-point scale (note that individual programs may set higher levels for any of these); and
4. Sufficient undergraduate training to do graduate work in the given field.

Applicants Who Already Hold a Graduate Degree

The Graduate Council views academic degrees not as vocational training certificates, but as evidence of broad training in research methods, independent study, and articulation of learning. Therefore, applicants who already have academic graduate degrees should be able to pursue new subject matter at an advanced level without the need to enroll in a related or similar graduate program.

Programs may consider students for an additional academic master's or professional master's degree only 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 apply only to one single degree program or one concurrent degree program per admission cycle.

Required Documents for Applications

1. **Transcripts:** Applicants may upload *unofficial* transcripts with your application for the departmental initial review. Unofficial transcripts must contain specific information including the name of the applicant, name of the school, all courses, grades, units, & degree conferral (if applicable).
2. **Letters of recommendation:** Applicants may request online letters of recommendation through the online application system. Hard copies of recommendation letters must be sent directly to the program, by the recommender, not the Graduate Admissions.
3. **Evidence of English language proficiency:** All applicants who have completed a basic degree from a country or political entity in which the official language is not English are required to submit official evidence of English language proficiency. This applies to institutions from Bangladesh, Burma, Nepal, India, Pakistan, Latin America, the Middle East, the People's Republic of China, Taiwan, Japan, Korea, Southeast Asia, most European countries, and Quebec (Canada). 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 US university may submit an official transcript from the US university to fulfill this requirement. The following courses will not fulfill this requirement:

- courses in English as a Second Language,
- courses conducted in a language other than English,
- courses that will be completed after the application is submitted, and
- courses of a non-academic nature.

Applicants who have previously applied to Berkeley must also submit new test scores that meet the current minimum requirement from one of the standardized tests. Official TOEFL score reports must be sent directly from Educational Test Services (ETS). The institution code for Berkeley is 4833 for Graduate Organizations. Official IELTS score reports must be sent electronically from the testing center to University of California, Berkeley, Graduate Division, Sproul Hall, Rm 318 MC 5900, Berkeley, CA 94720. TOEFL and IELTS score reports are only valid for two years prior to beginning the graduate program at UC Berkeley. Note: score reports can not expire before the month of June.

Where to Apply

Visit the Berkeley Graduate Division application page (<http://grad.berkeley.edu/admissions/apply/>).

Admission to the Program

Admission to the Metabolic Biology (formally Molecular and Biochemical Nutrition) program is based on a variety of factors, including academic achievement and relevant experience. We practice holistic admissions—each part of the application is important and thoroughly reviewed.

Applicants with a background in the biological sciences and lab experience are best suited for the Metabolic Biology program. While there are **no set prerequisites**, we look for the coursework in areas such as calculus, general and organic chemistry, biology, and biochemistry. Because this program is designed to develop research scientists, it is also important that applicants are familiar with an experimental lab setting.

Curriculum**Courses Required**

First Year		
NUSCTX 103	Nutrient Function and Metabolism	3
MCELLBI 110	Molecular Biology: Macromolecular Synthesis and Cellular Function	4
NUSCTX 211A	Introduction to Research in Nutritional Sciences (Rotations & reports)	4
NUSCTX 211B	Introduction to Research in Nutritional Sciences (Rotations & reports)	4
NUSCTX 250	Advanced Topics in Metabolic Biology	3
NUSCTX 260	Metabolic Bases of Human Health and Diseases Graduate Level	4
NUSCTX 290	Advanced Seminars in Nutritional Sciences (Advanced Special Topics in any biological/ chemical science department; Once a year)	2
NUSCTX 292	Graduate Research Colloquium (Every semester)	1
NUSCTX 293	Research Seminar (Faculty Research Presentations)	1
NUSCTX 302	Professional Preparation: Supervised Teaching Experience in Nutrition (In teaching semester)	1-4
NUSCTX 375	Professional Preparation: Teaching in Nutritional Sciences	1-2

Second—Fifth Years

NUSCTX 290	Advanced Seminars in Nutritional Sciences (Advanced Special Topics in any biological/ chemical science department; Once a year)	2
NUSCTX 292	Graduate Research Colloquium (Every semester)	1
NUSCTX 299	Nutritional Sciences and Toxicology Research (Every semester)	1-12

Curriculum**Courses Required**

First Year		
NUSCTX 103	Nutrient Function and Metabolism	3
MCELLBI 110	Molecular Biology: Macromolecular Synthesis and Cellular Function	4
NUSCTX 211A	Introduction to Research in Nutritional Sciences (Rotations & reports)	4
NUSCTX 211B	Introduction to Research in Nutritional Sciences (Rotations & reports)	4
NUSCTX 250	Advanced Topics in Metabolic Biology	3
NUSCTX 260	Metabolic Bases of Human Health and Diseases Graduate Level	4
NUSCTX 290	Advanced Seminars in Nutritional Sciences (Advanced Special Topics in any biological/ chemical science department)	2
NUSCTX 292	Graduate Research Colloquium (Every semester)	1
NUSCTX 293	Research Seminar (Faculty Research Presentations)	1
NUSCTX 299	Nutritional Sciences and Toxicology Research	1-12
NUSCTX 302	Professional Preparation: Supervised Teaching Experience in Nutrition ^{If teaching}	1-4
NUSCTX 375	Professional Preparation: Teaching in Nutritional Sciences	1-2

Second Year

NUSCTX 290	Advanced Seminars in Nutritional Sciences (Advanced Special Topics in any biological/ chemical science department)	2
NUSCTX 292	Graduate Research Colloquium	1
NUSCTX 299	Nutritional Sciences and Toxicology Research	1-12