

Articulation Agreement by Major

Effective during the 2022-2023 Academic Year

To: University of California, Berkeley
2022-2023 General Catalog, Semester

From: De Anza College
2022-2023 General Catalog, Quarter

Microbial Biology, Lower Division B.S.

PROGRAM

College Admission Requirements for Transfer Students

This major is offered by the Rausser College of Natural Resources.

Microbial Biology is located in UC Berkeley's Rausser College of Natural Resources, within the Department of Plant and Microbial Biology. Microbial Biology is a pivotal field of study because small life forms such as microbes, viruses, and fungi make up the majority of planetary biomass, and constitute key branches of the Tree of Life. Microbes play fundamental roles in maintaining biosphere health: they degrade environmental pollutants; they supply essential nutrients and chemicals directly to multi-cellular organisms, and they engage in numerous beneficial symbioses with higher organisms. Infectious diseases regulate populations of plant and animals, and outbreaks recur in human societies globally.

The major investigates interactions between microorganisms and the environment to determine the role microbes play in maintaining the health of our biosphere. This includes how microbes can help combat environmental pollutants, facilitate energy production, and influence the progress of medical research on infectious diseases.

For more information:

MB Student Academic Advisor
Office of Instruction and Student Affairs
260 Mulford Hall
Rausser College of Natural Resources
(510) 642-0542
e-mail: pmb.ugrad@berkeley.edu
<http://nature.berkeley.edu/advising/majors/microbial-biology>

For more information on the Rausser College of Natural Resources

<http://nature.berkeley.edu>

For more information on admission to UC Berkeley:

<http://admissions.berkeley.edu>

For more information on majors at UC Berkeley:

Berkeley Academic Guide: <http://guide.berkeley.edu>

REQUIREMENTS

PREPARATION FOR TRANSFER AT THE JUNIOR LEVEL

Transfer applicants **must** complete the minimum admissions requirements by the end of the **spring** term preceding fall enrollment at Berkeley, and are encouraged to complete as many additional lower division requirements as possible. Exceptions are highly unlikely.

Please pay particular attention to how courses from your community college articulate to Berkeley. If courses for a particular subject are articulated as a group (for example, a 3-course series at your college may articulate to a 2-course series at Berkeley), you will need to take all of the courses noted in order for the articulation to work. If you have questions about articulation, please contact our Office of Instruction and Student Affairs, Rausser College of Natural Resources, <https://nature.berkeley.edu/advising/meet-rausser-advisors>

In general, students will be evaluated on:

- The strength of academic preparation and the completion of lower division requirements in biology, chemistry, and math
- GPA in the required courses
- Cumulative GPA
- The personal statement

MINIMUM ADMISSION REQUIREMENTS

Equivalent of:
English R1A and English R1B
Biology 1A and 1AL
Biology 1B

Chemistry 1A and 1AL
Chemistry 3A and 3AL
Chemistry 3B and 3BL
Math 16A (or Math 1A or Math 10A)
Math 16B (or Math 1B or Math 10B)

Strongly recommended courses:

Physics 8A (or Physics 7A) and Statistics 2 (or Statistics 20) are strongly recommended.

Although IGETC is not required, certification will fulfill requirements for English R1A, English R1B and all Humanities and Social Sciences breadth courses.

Please refer to the Rausser College of Natural Resources Handbook for more information about substitutions for the ENGLISH R1A and R1B requirements: <https://nature.berkeley.edu/handbook>

BIOLOGY

Must complete biology courses prior to transferring.

CHEMISTRY

Must complete chemistry courses prior to transferring.

MATHEMATICS

Must complete math courses prior to transferring. UCB MATH 16A + MATH 16B **or** MATH 1A + MATH 1B **or** MATH 10A + MATH 10B.

PHYSICS It is highly recommended that you complete the Physics requirement prior to transferring. If an equivalent to PHYSICS 8A is unavailable, student should complete Physics 7A.

NOTE: This institution may cover the topics in Berkeley's PHYSICS 7ABC series in a different order. Students who transfer before completing courses equivalent to the entire 7ABC series may need to enroll in Berkeley's PHYSICS 49 to complete missing topics such as wave motion (7A) or heat (7B).

READING & COMPOSITION

Must complete Reading and Composition requirement prior to transferring. (IGETC satisfies this requirement)

STATISTICS It is highly recommended that you complete the Statistics requirement prior to transferring.

To ensure full articulation of transfer coursework: if a series of courses at a community college is required (e.g., Chemistry 101 + 102 + 103 = Chemistry 1A, 1AL + 1B at UC Berkeley), all the courses in the series must be completed, and must (unless otherwise indicated) be completed at the same community college. Partial completion of the series (e.g., 2 of the 3 required courses) may result in no credit toward the requirement(s), and completion of series courses at different community colleges is not guaranteed to satisfy the requirement. Courses taken out of series will be evaluated by college faculty during the transfer admissions process.

TEST CREDIT

HUMANITIES AND SOCIAL SCIENCES BREADTH At least 15 semester units of UC-transferable courses from fields such as economics, history, philosophy, art, music, political science, and/or foreign language (a maximum of 6 units allowed). (IGETC satisfies this requirement)

Some Advanced Placement, International Baccalaureate, and A-Level exams can fulfill requirements in the Rausser College of Natural Resources. For details, please see [AP, IB, and A-level Exam Equivalency Chart](#).

BIOLOGY

BIOLOGY 1A - General Biology Lecture (Cells, Genetics, Animal Form & Function) (3.00)

--- And ---

BIOLOGY 1AL - General Biology Laboratory (2.00)

BIOL 6A - Form and Function in the Biological World (6.00)

--- And ---

BIOL 6B - Cell and Molecular Biology (6.00)

--- Or ---

BIOL 6AH - Form and Function in the Biological World - HONORS (6.00)

--- And ---

BIOL 6B - Cell and Molecular Biology (6.00)

BIOLOGY 1B - General Biology (Plant Form & Function, Ecology, Evolution) (4.00)



BIOL 6A - Form and Function in the Biological World (6.00)

--- And ---

BIOL 6C - Ecology and Evolution (6.00)

--- Or ---

BIOL 6AH - Form and Function in the Biological World - HONORS (6.00)

--- And ---

BIOL 6C - Ecology and Evolution (6.00)

--- Or ---

BIOL 6A - Form and Function in the Biological World (6.00)

--- And ---

BIOL 6CH - Ecology and Evolution - HONORS (6.00)

--- Or ---

BIOL 6AH - Form and Function in the Biological World - HONORS (6.00)

--- And ---

BIOL 6CH - Ecology and Evolution - HONORS (6.00)

BIOLOGY 1A - General Biology Lecture (Cells, Genetics, Animal Form & Function) (3.00)

--- And ---

BIOLOGY 1AL - General Biology Laboratory (2.00)

--- And ---

BIOLOGY 1B - General Biology (Plant Form & Function, Ecology, Evolution) (4.00)



Articulates as Course-to-Course Only

CHEMISTRY

CHEM 1A - General Chemistry (3.00)

--- And ---

CHEM 1AL - General Chemistry Laboratory (2.00)



Articulates as a Series Only

CHEM 1A - General Chemistry (3.00)

--- And ---

CHEM 1AL - General Chemistry Laboratory (2.00)

--- And ---

CHEM 1B - General Chemistry (4.00)



CHEM 1A - General Chemistry (5.00)

--- And ---

CHEM 1B - General Chemistry (5.00)

--- And ---

CHEM 1C - General Chemistry and Qualitative Analysis (5.00)

- *Regular and honors courses may be combined to complete this series*

--- Or ---

CHEM 1AH - General Chemistry - HONORS (5.00)

--- And ---

CHEM 1BH - General Chemistry - HONORS (5.00)

--- And ---

CHEM 1CH - General Chemistry and Qualitative Analysis - HONORS (5.00)

- *Regular and honors courses may be combined to complete this series*

CHEM 3A - Chemical Structure and Reactivity (3.00)

--- And ---

CHEM 3AL - Organic Chemistry Laboratory (2.00)



CHEM 12A - Organic Chemistry (5.00)

--- And ---

CHEM 12B - Organic Chemistry (5.00)

CHEM 3B - Chemical Structure and Reactivity (3.00)

--- And ---

CHEM 3BL - Organic Chemistry Laboratory (2.00)



CHEM 12B - Organic Chemistry (5.00)

--- And ---

CHEM 12C - Organic Chemistry (5.00)

CHEM 3A - Chemical Structure and Reactivity (3.00)

--- And ---

CHEM 3AL - Organic Chemistry Laboratory (2.00)

--- And ---

CHEM 3B - Chemical Structure and Reactivity (3.00)

--- And ---

CHEM 3BL - Organic Chemistry Laboratory (2.00)



Articulates as Course-to-Course Only

MATHEMATICS

Select 1 Sequence(s) from the following

MATH 16A - Analytic Geometry and Calculus (3.00)



MATH 1A - Calculus (5.00)

--- Or ---

MATH 1AH - Calculus - HONORS (5.00)

MATH 16B - Analytic Geometry and Calculus (3.00)



MATH 1B - Calculus (5.00)

--- Or ---

MATH 1BH - Calculus - HONORS (5.00)

MATH 1A - Calculus (4.00)



MATH 1A - Calculus (5.00)

--- And ---

MATH 1B - Calculus (5.00)

- Regular and honors courses may be combined to complete this series

--- Or ---

MATH 1AH - Calculus - HONORS (5.00)

--- And ---

MATH 1BH - Calculus - HONORS (5.00)

- Regular and honors courses may be combined to complete this series

MATH 1B - Calculus (4.00)



MATH 1B - Calculus (5.00)

--- And ---

MATH 1C - Calculus (5.00)

- Regular and honors courses may be combined to complete this series

--- Or ---

MATH 1BH - Calculus - HONORS (5.00)

--- And ---

MATH 1CH - Calculus - HONORS (5.00)

- Regular and honors courses may be combined to complete this series

MATH 10A - Methods of Mathematics: Calculus, Statistics, and Combinatorics (4.00)



No Course Articulated

MATH 10B - Methods of Mathematics: Calculus, Statistics, and Combinatorics (4.00)



No Course Articulated

PHYSICS

Select 1 Course(s) from the following

Recommended to be completed prior to transfer

PHYSICS 8A - Introductory Physics (4.00)



PHYS 4A - Physics for Scientists and Engineers: Mechanics (6.00)

--- And ---

PHYS 4B - Physics for Scientists and Engineers: Electricity and Magnetism (6.00)

--- Or ---

PHYS 2A - General Introductory Physics (5.00)

--- And ---

PHYS 2C - General Introductory Physics (5.00)

PHYSICS 8A - Introductory Physics (4.00)

--- And ---

PHYSICS 8B - Introductory Physics (4.00)



Articulates as Course-to-Course Only

--- Or ---

PHYSICS 7A - Physics for Scientists and Engineers (4.00)



PHYS 4A - Physics for Scientists and Engineers: Mechanics (6.00)

PHYSICS 7A - Physics for Scientists and Engineers (4.00)

--- And ---

PHYSICS 7B - Physics for Scientists and Engineers (4.00)



Articulates as Course-to-Course Only

PHYSICS 7A - Physics for Scientists and Engineers (4.00)

--- And ---

PHYSICS 7B - Physics for Scientists and Engineers (4.00)

--- And ---

PHYSICS 7C - Physics for Scientists and Engineers (4.00)



Articulates as Course-to-Course Only

STATISTICS

Select 1 Course(s) from the following
Recommended to be completed prior to transfer

STAT 2 - Introduction to Statistics (4.00)



MATH 10 - Introductory Statistics (5.00)

--- Or ---

MATH 10H - Introductory Statistics - HONORS (5.00)

--- Or ---

MATH 17 - Integrated Statistics 2 (5.00)

STAT 20 - Introduction to Probability and Statistics (4.00)



No Course Articulated

- This course has a prerequisite of one semester of calculus

READING AND COMPOSITION REQUIREMENT

ENGLISH R1A - Reading and Composition (4.00)



EWRT 1A - Composition and Reading (5.00)

--- Or ---

EWRT 1AH - Composition and Reading - HONORS (5.00)

--- Or ---

ESL 5 - Advanced Composition and Reading (5.00)

ENGLISH R1B - Reading and Composition (4.00)



EWRT 1B - Reading, Writing and Research (5.00)

--- Or ---

EWRT 2 - Critical Reading, Writing and Thinking (5.00)

--- Or ---

EWRT 1BH - Reading, Writing and Research - HONORS (5.00)

--- Or ---

EWRT 2H - Critical Reading, Writing and Thinking - HONORS (5.00)

END OF AGREEMENT