Guidelines by Major Effective during the 18-19 Academic Year

To: UC Berkeley
From: Santa Barbara City College

18-19 General Catalog Semester | 18-19 General Catalog Semester

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===Microbial Biology, Lower Division B.S.====

College Admission Requirements for Transfer Students
This major is offered by the College of Natural Resources.

PROGRAM

Microbial Biology is located in UC Berkeley's 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.

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, College of Natural Resources, http://nature.berkeley.edu

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
Microbial Biology, Lower Division B.S. (continued)

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.

AP Credit - We will accept the following AP credit:

Math 16A = AP Math AB, score of 3, 4, or 5 OR AP Math BC, Score of 3, 4, or 5
Math 16B = AP Math BC, score of 5
Chem 1A and 1AL = AP Chemistry, score of 4 or 5
Physics 8A = AP Physics B, score of 3, 4 or 5
Statistics Requirement = AP Statistics, score 3, 4, or 5

Humanities and Social Science AP test scores of 3 or higher may also be counted towards the 15-unit Humanities requirement.

Please note that substituting AP scores for science and math coursework is accepted, but not recommended. Students who use AP scores for these requirements may struggle in subsequent coursework.

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

For more information:
MB Student Academic Advisor
Office of Instruction and Student Affairs
260 Mulford Hall
College of Natural Resources
510) 642-0542
e-mail: cnrteaching@berkeley.edu

http://nature.berkeley.edu/advising/majors/microbial-biology

For more information on the College of Natural Resources
http://nature.berkeley.edu
To: UC Berkeley, From: Santa Barbara City College, 18-19

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Microbial Biology, Lower Division B.S. (continued)

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

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**BIOLOGY**
Must complete biology courses prior to transferring.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Units</th>
<th>Course Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOLOGY 1A</td>
<td>General Biology</td>
<td>(3)</td>
<td>BIOL 101 Plant Biology (4)</td>
</tr>
<tr>
<td></td>
<td>Lecture (Cells, Genetics, Animal Form &amp; Function)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIOLOGY 1AL</td>
<td>General Biology</td>
<td>(2)</td>
<td>BIOL 102 Animal Biology (5)</td>
</tr>
<tr>
<td></td>
<td>Laboratory</td>
<td></td>
<td>BIOL 103 Cell Biology (5.5)</td>
</tr>
<tr>
<td>BIOLOGY 1B</td>
<td>General Biology (Plant Form &amp; Function, Ecology, Evolution)</td>
<td>(4)</td>
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**CHEMISTRY**
Must complete chemistry courses prior to transferring.

<table>
<thead>
<tr>
<th>Course Code</th>
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</tr>
</thead>
<tbody>
<tr>
<td>CHEM 1A</td>
<td>General Chemistry</td>
<td>(3)</td>
<td>CHEM 155 General Chemistry I (5)</td>
</tr>
<tr>
<td>CHEM 1AL</td>
<td>General Chemistry</td>
<td>(1)</td>
<td>Laboratory</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Laboratory I</td>
</tr>
<tr>
<td>CHEM 3A</td>
<td>Chemical Structure and Reactivity</td>
<td>(3)</td>
<td>CHEM 211 Organic Chemistry I (3)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>CHEM 221 Organic Chemistry (2.3)</td>
</tr>
<tr>
<td>CHEM 3AL</td>
<td>Organic Chemistry</td>
<td>(2)</td>
<td>Laboratory I</td>
</tr>
<tr>
<td></td>
<td>Laboratory</td>
<td></td>
<td>Laboratory II</td>
</tr>
<tr>
<td>CHEM 3B</td>
<td>Chemical Structure and Reactivity</td>
<td>(3)</td>
<td>CHEM 212 Organic Chemistry II (3)</td>
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<td></td>
<td></td>
<td></td>
<td>CHEM 222 Organic Chemistry (2.5)</td>
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<tr>
<td>CHEM 3BL</td>
<td>Organic Chemistry</td>
<td>(2)</td>
<td>Laboratory II</td>
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<tr>
<td></td>
<td>Laboratory</td>
<td></td>
<td>Laboratory II</td>
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</tbody>
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**MATHEMATICS**
Must complete math courses prior to transferring.

UCB MATH 16A + MATH 16B OR MATH 1A + MATH 1B OR MATH 10A + MATH 10B

<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Units</th>
<th>Course Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 16A</td>
<td>Analytic Geometry and Calculus</td>
<td>(3)</td>
<td>MATH 130 Calculus for Biological Sciences, Social Sciences and Business I</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH 16B</td>
<td>Analytic Geometry and Calculus</td>
<td>(3)</td>
<td>MATH 131 Calculus for Biological Sciences, Social Sciences and Business II</td>
</tr>
<tr>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>MATH 1A</td>
<td>Calculus</td>
<td>(4)</td>
<td>MATH 150 Calculus with Analytic Geometry I</td>
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<tr>
<td>-- OR --</td>
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Microbial Biology, Lower Division B.S. (continued)

MATH 1B Calculus (4) | MATH 160 Calculus with Analytic Geometry II (5)

-- OR --

MATH 10A Methods of Mathematics: Calculus, Statistics, and Combinatorics (4) | NO COURSE ARTICULATED

MATH 10B Methods of Mathematics: Calculus, Statistics, and Combinatorics (4) | NO COURSE ARTICULATED

PHYSICS

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

PHYSICS 8A Introductory Physics (4) | PHYS 110 Introductory Physics (4)

OR

PHYSICS 7A Physics for Scientists and Engineers (4) | PHYS 121 Mechanics of Solids and Fluids (5)

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).

STATISTICS

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

STAT 2 Introduction to Statistics (4) | MATH 117 Elementary Statistics (4)

OR

MATH 117H Elementary Statistics, Honors (4)

OR

PSY 150 Statistics for the Behavioral Sciences (4)

OR

STAT C8 Foundations of Data Science (4) | NO COURSE ARTICULATED

OR

STAT 20 Introduction to Probability and Statistics (4) | NO COURSE ARTICULATED

NOTE: STAT 20 at Berkeley has a prerequisite of one semester of calculus.

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)
Microbial Biology, Lower Division B.S. (continued)

READING & COMPOSITION

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

<table>
<thead>
<tr>
<th>ENGLISH R1A</th>
<th>Reading and Composition (4)</th>
<th>ENG 110</th>
<th>Composition and Reading (3)</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>OR</td>
<td>ENG 110H</td>
<td>Composition and Reading, Honors (3)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ENGLISH R1B</th>
<th>Reading and Composition (4)</th>
<th>ENG 111</th>
<th>Critical Thinking and Composition Through Literature (3)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OR</td>
<td>ENG 111H</td>
<td>Critical Thinking and Composition through Literature, Honors (3)</td>
</tr>
</tbody>
</table>

END OF MAJOR