Microbiology, BS

To make a difference in science and health, first study the smallest living things --- bacteria, protozoa and viruses --- and learn about immunology, the science of immune systems and how bodies defend against infectious diseases.

Program Description

The BS program in microbiology combines the study of the branch of biology involving the smallest of living things (bacteria, fungi, algae, protozoa and viruses) and immunology (the study of all aspects of the immune system).

Despite their small size, microbes are fundamental to life on Earth and compose the majority of all Earth's life forms. In addition to their essential contributions to the natural world, microbes have been model experimental subjects due to their impact on human health and ease of manipulation in the laboratory. A significant portion of medical research employs microbiological and immunological methods in order to examine basic genetic and biological phenomena.

The microbiology degree program places emphasis on understanding microorganisms and their interrelationships with other organisms in nature and on the influence of microorganisms in biomedicine and biotechnology. Students in the microbiology degree program study the background and current findings in the field of microbiology and also acquire the critical thinking skills and the hands-on laboratory and field skills required to succeed in science.

The major provides excellent training for premedical, predental, preveterinary and prepharmacy students as well as advanced study in microbiology and immunology.

This program is available as an accelerated degree program. Students can visit this website to learn more about accelerated degree programs: https://sols.asu.edu/degree-programs/accelerated-bachelor-master-science.

Due to the high volume of overlap in curriculum, students enrolled in a BS degree in the School of Life Sciences may be restricted from declaring a concurrent degree within the school. Students should speak with their academic advisor for any further questions.
At a Glance

- **College/School:** The College of Liberal Arts and Sciences
- **Location:** Tempe campus
- **Additional Program Fee:** Yes
- **Second Language Requirement:** No
- **First Required Math Course:** MAT 251 - Calculus for Life Sciences or MAT 270 Calculus with Analytic Geometry I
- **Math Intensity:** Moderate

Required Courses (Major Map)

2020 - 2021 Major Map
Major Map (Archives)

Accelerated Program Options

This program allows students to obtain both a bachelor's and master's degree in as little as five years. It is offered as an accelerated bachelor's and master's degree with:

- Biology, MS
- Global Management (Creative Industries and Design Thinking), MGM
- Global Management (Digital Audience Strategy), MGM
- Global Management (Global Business), MGM
- Global Management (Global Development and Innovation), MGM
- Global Management (Global Digital Transformation), MGM
- Global Management (Global Entrepreneurship), MGM
- Global Management (Global Health Care Delivery), MGM
- Global Management (Global Legal Studies), MGM
- Global Management (Integrated Health Care), MGM
- Global Management (Nonprofit Leadership and Management), MGM
- Global Management (Public Administration), MGM
- Global Management (Public Policy), MGM
- Global Management (Sustainability Solutions), MGM
- Global Management (Sustainable Tourism), MGM
- Global Management, MGM
Acceptance to the graduate program requires a separate application. During their junior year, eligible students will be advised by their academic departments to apply.

**Admission Requirements**

**General University Admission Requirements:**
All students are required to meet general university admission requirements.

- [Freshman](#)
- [Transfer](#)
- [International](#)
- [Readmission](#)

**Change of Major Requirements**

A current ASU student has no additional requirements for changing majors.

Students should refer to [https://changemajor.apps.asu.edu](https://changemajor.apps.asu.edu) for information about how to change a major to this program.

**Transfer Options**

ASU is committed to helping students thrive by offering tools that allow personalization of the transfer path to ASU. Students may use [MyPath2ASU™](#) to outline a list of recommended courses to take prior to transfer.

ASU has transfer partnerships in Arizona and across the country to create a simplified transfer experience for students. These pathway programs include exclusive benefits, tools and resources, and help students save time and money in their college journey. Students may learn more about these programs by visiting the admission site: [https://admission.asu.edu/transfer/pathway-programs](https://admission.asu.edu/transfer/pathway-programs).

**Global Opportunities**

**Global Experience**

Students enhance their resumes and gain valuable experience through studying abroad. With over 250 programs available, study abroad allows students to tailor their experience to their unique interests and skillsets. Students studying microbiology are able to expand their knowledge of how microbes impact people and society in a variety of cultures and challenge themselves to adapt and persevere in a new and exciting culture. [https://mystudyabroad.asu.edu/](https://mystudyabroad.asu.edu/)
Career Opportunities

The discipline of microbiology is diverse and the job opportunities for microbiologists are enormous. Graduates with a degree in microbiology have opportunities for employment in:

- government
- hospitals
- industrial laboratories (food, dairy, chemical, pharmaceutical, environmental and biotechnology companies)
- public health laboratories
- research laboratories

Many students are also suitably prepared for admission into graduate school and advanced study in these fields:

- dentistry
- medicine
- pharmacy
- veterinary medicine

Career examples include but are not limited to those shown in the following list. Advanced degrees or certifications may be required for academic or clinical positions.

<table>
<thead>
<tr>
<th>Career</th>
<th>*Growth</th>
<th>*Median Salary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biological Sciences Professor</td>
<td>15.2%</td>
<td>$78,240</td>
</tr>
<tr>
<td>Clinical Trial Manager</td>
<td>9.9%</td>
<td>$118,970</td>
</tr>
<tr>
<td>Cytotechnologist</td>
<td>11.5%</td>
<td>not available</td>
</tr>
<tr>
<td>Food Scientist</td>
<td>5.7%</td>
<td>$63,660</td>
</tr>
<tr>
<td>Genetic Counselor</td>
<td>29.0%</td>
<td>$77,480</td>
</tr>
<tr>
<td>Health and Safety Technician</td>
<td>10.1%</td>
<td>$49,960</td>
</tr>
<tr>
<td>Laboratory Technologist</td>
<td>11.5%</td>
<td>not available</td>
</tr>
<tr>
<td>Medical Scientist</td>
<td>13.4%</td>
<td>$82,090</td>
</tr>
<tr>
<td>Microbiologist</td>
<td>8.2%</td>
<td>$69,960</td>
</tr>
<tr>
<td>Molecular Biologist</td>
<td>8.0%</td>
<td>$76,690</td>
</tr>
</tbody>
</table>

* Data obtained from the Occupational Information Network (O*NET) under sponsorship of the U.S. Department of Labor/Employment and Training Administration (USDOL/ETA).

🌞 Bright Outlook 🌿 Green Occupation
Contact Information

School of Life Sciences | LSA 189
sols.advising@asu.edu | 480-727-6277