Biochemistry (Medicinal Chemistry), BS
LABCHMBS

Learn about the molecular processes of life, how medicine works at the molecular level to benefit human health, and build your problem-solving skills. The skills you gain through the molecular and life sciences courses in this program help prepare you for a variety of careers.

Program Description

Students in the BS program in biochemistry take courses in areas ranging from basic chemistry, through the properties and function of biomolecules and the mechanisms of cellular function, to living organisms.

With a concentration in medicinal chemistry, students learn how to apply chemical and biochemical thinking to the design and function of medicines. They take classes in advanced organic chemistry and medicinal chemistry and learn the fundamental chemical basics of drug design, synthesis and mechanism of action.

In addition to the guidelines in the Concurrent Program Options section below, students interested in pursuing concurrent or second baccalaureate degrees in The College of Liberal Arts and Sciences are advised to visit The College's website for more information and requirements.
https://thecollege.asu.edu/concurrent-and-second-baccalaureate-degrees

At a Glance

- **College/School:** [The College of Liberal Arts and Sciences](#)
- **Location:** [Tempe campus](#) or [Online](#), [ASU Local](#)

- **Additional Program Fee:** Yes
- **Second Language Requirement:** No
• **First Required Math Course:** MAT 270 - Calculus w/Analytic Geometry I or MAT 265 Calculus for Engineers I
• **Math Intensity:** Substantial

### Required Courses (Major Map)

- [2022 - 2023 Major Map (On-campus)]
- [2022 - 2023 Major Map (Online)]
- [Major Map (Archives)]

### Concurrent Program Options

Students pursuing concurrent degrees (also known as a "double major") earn two distinct degrees and receive two diplomas. Working with their academic advisors, students can create their own concurrent degree combination. Some combinations are not possible due to high levels of overlap in curriculum.

### 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:

- **Biochemistry (Medicinal Chemistry), MS**
- **Nanoscience, PSM**

Acceptance to the graduate program requires a separate application. During their junior year, eligible students are 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.

### Attend Online

ASU Online
ASU offers this program in an online format with multiple enrollment sessions throughout the year. Applicants may view the program description and request more information here.

ASU Local

It is now possible to earn an ASU degree with ASU Local, an integrated college experience in which students take advantage of in-person success coaching and programming experiences on site while completing one of 130+ undergraduate online degree programs, all of which come with online faculty interaction and tutoring support. Those interested may learn more about ASU Local here.

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 they 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/MyPath2ASU.

Global Opportunities

Global Experience
When studying abroad, students gain valuable experience in a diverse set of programs in places such as Hong Kong and Barcelona. Students earn ASU credit for completed courses, while staying on track for graduation. Studying abroad helps students build cultural competency skills as well as heightened skills in communication, critical thinking and leadership that allow them to stand out on their graduate school applications. https://goglobal.asu.edu/

Career Opportunities

A solid undergraduate education in biochemistry provides the necessary background for career paths in chemical, medical, pharmaceutical and biotechnology industries and also for careers in governmental regulation, health care, research and other areas, as well as confer critical skills for pharmacy and medical school.

Students planning careers in medicine, dentistry, pharmacy or veterinary medicine often pursue the medicinal chemistry concentration, with supporting work in biology and chemistry as the route for preprofessional training.
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>Dentist</td>
<td>2.8%</td>
<td>$158,940</td>
</tr>
<tr>
<td>High School Teacher</td>
<td>3.8%</td>
<td>$62,870</td>
</tr>
<tr>
<td>Medical Doctor (MD)</td>
<td>#</td>
<td></td>
</tr>
<tr>
<td>Medical Lab Technician</td>
<td></td>
<td>not available</td>
</tr>
<tr>
<td>Medical Scientist</td>
<td>6.1%</td>
<td>$91,510</td>
</tr>
<tr>
<td>Optometrists</td>
<td>4.3%</td>
<td>$118,050</td>
</tr>
<tr>
<td>Pharmacist</td>
<td></td>
<td>$128,710</td>
</tr>
<tr>
<td>Physician Assistant (PA)</td>
<td>31.3%</td>
<td>$115,390</td>
</tr>
<tr>
<td>Scientist/Biochemist</td>
<td>4.0%</td>
<td>$94,270</td>
</tr>
<tr>
<td>Veterinarian (Vet)</td>
<td>15.9%</td>
<td>$99,250</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**

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