Experience the excitement of scientific discovery. Learn how genetic information is organized and transmitted across generations and study how genes can affect change at the cellular level and in organisms.

Program Description

The BS program in biological sciences with a concentration in genetics, cell and developmental biology integrates the study of three exciting, closely related areas of life science research.

Genetics examines the blueprints of life, such as DNA sequence and gene expression, while cell biology studies the machinery of life enclosed within the boundaries of cells. Developmental biology uses both genetics and cell biology to understand how genes and the environment interact to produce a whole new individual from a single cell as well as to understand the various developmental changes that organisms undergo throughout life.

The combined study of genetics, cell biology and development has resulted in a better understanding of many diseases and promises to prove even more important in the future.

Students are encouraged to engage in independent research projects or internship opportunities to develop a better sense of how science is done.

This program is available as an accelerated degree program.

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.
At a Glance

- **College/School:** The College of Liberal Arts and Sciences
- **Location:** Tempe or Online, ASU Local
- **Additional Program Fee:** Yes
- **Second Language Requirement:** No
- **First Required Math Course:** MAT 251 - Calculus for Life Sciences
- **Math Intensity:** Moderate

Required Courses (Major Map)

2023 - 2024 Major Map (On-campus)
2023 - 2024 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 plus master's degree with:

- Biology (Biology and Society), MS
- Biology, MS
- Global Management (Creative Industries and Design Thinking), MGM
- Global Management (Digital Audience Strategy), MGM
- Global Management (Global Affairs), 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
Acceptance to the graduate program requires a separate application. Students typically receive approval to pursue the accelerated master's during the junior year of their bachelor's degree program. Interested students can learn about eligibility requirements and how to apply.

**Admission Requirements**

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

**Tuition Information**

When it comes to paying for college, everyone's situation is different. Students can learn about ASU tuition and financial aid options to find out which will work best for them.

**Change of Major Requirements**

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

Students should visit the Change of Major form 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's ASU Online page for program descriptions and to request more information.

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.

**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.

**Global Opportunities**

**Global Experience**

Through study abroad, students studying biological sciences are able to experience unique biological environments and gain an understanding of worldwide differences in the human condition. They are able to be exposed to a variety of laws, policies and practices in biology-centric environments worldwide and expand their knowledge of how science impacts society. Students also are able to engage in community service and outreach all around the world, which can help them stand out in graduate study or a professional career.

With more than 300 programs available, Global Education programs allow students to tailor their experience to their unique interests and skill sets. The College of Liberal Arts and Sciences recommends these programs for students majoring in biological sciences with a concentration in genetics, cell and developmental biology.

**Career Opportunities**

Graduates of this concentration have learned critical thinking skills that can be applied to many scientific problems and professions as well as to the challenges of daily life, and they have a variety of career options.

This degree provides the fundamental coursework necessary for admission into medical, dental, veterinary, pharmacy or graduate schools or any of the health professions. There also are many employment opportunities that can be pursued upon receipt of the Bachelor of Science with this concentration, such as:
• animal breeder technician
• bioinformaticist or biotechnologist
• crime lab technician
• cytotechnologist
• drug or vaccine design technician
• genetic counselor
• histologist
• in-vitro fertilization technician
• teacher
• technical writer

Career example titles and salaries listed below are not necessarily entry level, and students should take into consideration how years of experience, geographical location, and required advanced degrees or certifications may affect pay scales.

<table>
<thead>
<tr>
<th>Career</th>
<th>*Growth</th>
<th>*Median Salary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biological Sciences Professor 🌟</td>
<td>8.6%</td>
<td>$81,650</td>
</tr>
<tr>
<td>Clinical Trial Manager</td>
<td>4.8%</td>
<td>$144,440</td>
</tr>
<tr>
<td>Cytotechnologist</td>
<td>4.9%</td>
<td>$57,380</td>
</tr>
<tr>
<td>Epidemiologist 🌟</td>
<td>26.7%</td>
<td>$78,520</td>
</tr>
<tr>
<td>Genetic Counselor 🌟</td>
<td>16.1%</td>
<td>$89,990</td>
</tr>
<tr>
<td>Geneticist</td>
<td>3.9%</td>
<td>$87,300</td>
</tr>
<tr>
<td>High School Teacher</td>
<td>1.0%</td>
<td>$62,360</td>
</tr>
<tr>
<td>Medical Scientist 🌟</td>
<td>9.8%</td>
<td>$99,930</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

Contact Information

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