Experience the excitement of scientific discovery in genetics, cell and developmental biology. In this concentration program, learn how genetic information is organized and transmitted across generations and study how genes affect change in cells and organisms. Insights gained through research help inform emerging fields such as genomics, epigenetics and individualized medicine.

Program Description

The BS degree 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 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.

This program is available as an accelerated degree program: https://sols.asu.edu/degree-programs/accelerated-bachelor-master-science.

At a Glance

- **College/School:** 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)

2018 - 2019 Major Map  
Major Map (Archives)

### Accelerated Degrees

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 (Biology and Society), MS
- Biology, MS
- Molecular and Cellular Biology, MS

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://students.asu.edu/changingmajors](https://students.asu.edu/changingmajors) for information about how to change a major to this program.

### Transfer Agreements
ASU has partnered with colleges and universities in Arizona, California, Illinois and Washington to provide transfer curriculum pathways. Students should select their current institution to see if there is a partnership agreement between the institution and ASU for this degree program. Students who do not see their state or institution listed should check back as ASU is always working on creating new partnerships.

Transfer from a Maricopa Community College in Arizona
- Chandler-Gilbert Community College
- Estrella Mountain Community College
- GateWay Community College
- Glendale Community College
- Mesa Community College
- Paradise Valley Community College
- Phoenix College
- Rio Salado College
- Scottsdale Community College
- South Mountain Community College

Transfer from an Arizona Community College
- Arizona Western College
- Central Arizona College
- Cochise College
- Coconino Community College
- Dine College
- Eastern Arizona College
- Gila Community College
- Mohave Community College
- Northland Pioneer College
- Pima Community College
- Tohono O'odham Community College
- Yavapai College

Transfer from another state
- California
- Illinois
- Washington
- Another state

Global Opportunities

Global Experience

With over 250 programs in more than 65 countries (ranging from one week to one year), study abroad is possible for all ASU students wishing to gain global skills and knowledge in preparation for a 21st century career. Students earn ASU credit for completed courses, while staying on track for graduation, and may apply financial aid and scholarships toward program costs. https://mystudyabroad.asu.edu/
Career Opportunities

Students who pursue this concentration have a variety of career options. This degree provides the fundamental coursework necessary for admission into medical, dental, veterinarian, 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:

- animal breeder technician
- bioinformaticist
- biotechnologist
- cell culture specialist
- cloning technician
- crime lab technician
- cytotechnologist
- drug design technician
- food and drug inspector
- genetic counselor
- histologist
- in-vitro fertilization technician
- plant improvement specialist
- teacher
- technical writer
- vaccine development technician

Students in this concentration program learn critical-thinking skills that can be applied to many scientific problems and professions as well as to the challenges of daily life. Students are encouraged to engage in independent research projects or internship opportunities in order to develop a better sense of how science is done.

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>Occupation</td>
<td>Growth Rate</td>
<td>Salary</td>
</tr>
<tr>
<td>------------------------------------------------</td>
<td>-------------</td>
<td>------------</td>
</tr>
<tr>
<td>Community Health Worker</td>
<td>18.1%</td>
<td>$38,370</td>
</tr>
<tr>
<td>Cytotechnologist</td>
<td>11.5%</td>
<td>not available</td>
</tr>
<tr>
<td>Epidemiologist</td>
<td>8.8%</td>
<td>$69,660</td>
</tr>
<tr>
<td>Family Physician</td>
<td>14.3%</td>
<td>$198,740</td>
</tr>
<tr>
<td>Fuel Cell Engineer</td>
<td>8.8%</td>
<td>$85,880</td>
</tr>
<tr>
<td>Fuel Cell Technician</td>
<td>5.2%</td>
<td>$62,230</td>
</tr>
<tr>
<td>Geneticist</td>
<td>8.0%</td>
<td>$76,690</td>
</tr>
<tr>
<td>Health Sciences Manager</td>
<td>9.9%</td>
<td>$118,970</td>
</tr>
<tr>
<td>High School Teacher</td>
<td>7.5%</td>
<td>$59,170</td>
</tr>
<tr>
<td>Histotechnologist and Histologic Technician</td>
<td>11.5%</td>
<td>not available</td>
</tr>
<tr>
<td>Hydrogeologist</td>
<td>9.9%</td>
<td>$118,970</td>
</tr>
<tr>
<td>Life Scientist</td>
<td>9.2%</td>
<td>$74,540</td>
</tr>
<tr>
<td>Medical Scientist</td>
<td>13.4%</td>
<td>$82,090</td>
</tr>
<tr>
<td>Medical and Health Services Manager</td>
<td>20.5%</td>
<td>$98,350</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>
<tr>
<td>Pharmacist</td>
<td>5.6%</td>
<td>$124,170</td>
</tr>
<tr>
<td>Physical Therapist (PT)</td>
<td>28.0%</td>
<td>$86,850</td>
</tr>
<tr>
<td>Physician Assistant (PA)</td>
<td>37.3%</td>
<td>$104,860</td>
</tr>
<tr>
<td>Scientist/Biochemist</td>
<td>11.5%</td>
<td>$91,190</td>
</tr>
<tr>
<td>Surgeon (General)</td>
<td>11.4%</td>
<td>#</td>
</tr>
<tr>
<td>Technical Writer</td>
<td>11.0%</td>
<td>$70,930</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  ✨ Green Occupation

**Contact Information**

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