BACHELOR OF SCIENCE IN HEALTH SCIENCES WITH A MAJOR IN BIOINFORMATICS

Bioinformaticists use computers to analyze, organize, and visualize biological data in ways that increase the understanding of this data and lead to new discoveries. Graduates of this program will be well-qualified for many rewarding careers, including those in bioinformatics software development, biomedical research, biotechnology, comparative genomics, genomics, molecular imaging, pharmaceutical research and development, proteomics, and vaccine development.

Visit the program website (https://smhs.gwu.edu/bioinformatics) for more information.

REQUIREMENTS

The following requirements must be fulfilled:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>60 credits of general education including:</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 credits English composition</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 credits humanities</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6 credits social science</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8 credits biology with lab</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8 credits of general or inorganic chemistry with lab</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4 credits of organic chemistry with lab or 4 credits of genetics with lab</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8 credits in computer science (or related coursework in programming languages)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4 credits in calculus</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 credits in statistics</td>
<td></td>
</tr>
<tr>
<td></td>
<td>13 credits in elective courses. Additional courses in biology, chemistry, computer science, mathematics, and/or statistics are recommended.</td>
<td></td>
</tr>
</tbody>
</table>

**Required**

- HSCI 2105 Current Issues in Bioethics
- HSCI 2112W Writing in the Health Sciences
- HSCI 4106 Introduction to Epidemiology for Health Sciences
- HSCI 4112W Research and Writing in Health Sciences

- INFR 3101 Introduction to Bioinformatics
- INFR 3102 Scripting
- INFR 3103 Genomics
- INFR 4120 Bioinformatics Algorithms
- INFR 4121 High Performance Computing
- INFR 4122 Advanced Scripting
- INFR 4123 Statistical Genetics
- INFR 4203 Seminar in Computational Biology

6 credits from the following (may be repeated for credit):

- INFR 4204 Bioinformatics Internship
- INFR 4205 Bioinformatics Research Project

**Electives**

9 credits from the following:

- INFR 3104 Human Genetics
- HSCI 3105 Biochemistry
- HSCI 3106 Microbiology for Health Sciences
- HSCI 3117 Principles of Biostatistics for Health Sciences

9 credits from the following:

- INFR 4101 Introduction to Medical Informatics
- INFR 4102 Survey of Medicine for Informaticians
- INFR 4104 Medical Informatics Terminology & Standards
- INFR 4105 Consumer Health Informatics
- INFR 4106 Population Health for Medical Informatics