Biophysics, Minor

Biophysics is concerned with the application of the concepts and methods of physics to the solution of biological problems and to the understanding of biological processes. Students who complete the biophysics minor achieve a grasp of physics as it relates to solving biological problems, a general understanding of the nature of biological problems and of proteins and cell membranes in particular and of several techniques based on physics principles that are used in biological investigations.

Minor in Biophysics

Cognate requirements for the minor are one year each of introductory biology and introductory chemistry as follows:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cognate Course Requirements:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Required Biology Sequence:</td>
<td>6</td>
</tr>
<tr>
<td>BIOL 1001 &amp; BIOL 1002</td>
<td>General Biology 1 and General Biology 2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Required Chemistry Sequence:</td>
<td>8</td>
</tr>
<tr>
<td>CHEM 1001 &amp; CHEM 1002</td>
<td>General Chemistry 1 and General Chemistry 2</td>
<td></td>
</tr>
</tbody>
</table>

Total Credit Hours: 14

Biophysics Minor Course Requirements:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Biophysics Minor Course Requirements:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Required Introduction to Organic Chemistry:</td>
<td>1-8</td>
</tr>
<tr>
<td>CHEM 2111 &amp; CHEM 2112</td>
<td>Organic Chemistry 1 and Organic Chemistry 2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>or</td>
<td></td>
</tr>
<tr>
<td>CHEM 2113 &amp; CHEM 2114</td>
<td>Organic Chemistry for Majors 1 and Organic Chemistry for Majors 2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>or</td>
<td></td>
</tr>
<tr>
<td>BISC 2050</td>
<td>Organic Chemistry for the Health Sciences</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Required Differential and Integral Calculus:</td>
<td>3-4</td>
</tr>
<tr>
<td>MATH 1410</td>
<td>Calculus for the Biological Sciences</td>
<td></td>
</tr>
<tr>
<td>MATH 1450</td>
<td>Calculus 1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Required Physics Sequence:</td>
<td>8</td>
</tr>
<tr>
<td>PHYS 1001 &amp; PHYS 1002</td>
<td>General Physics 1 and General Physics 2</td>
<td></td>
</tr>
<tr>
<td>PHYS 1003 &amp; PHYS 1004</td>
<td>General Physics with Introductory Calculus 1 and General Physics with Introductory Calculus 2</td>
<td></td>
</tr>
<tr>
<td>PHYS 1013 &amp; PHYS 1014</td>
<td>Classical and Modern Physics with Calculus 1 and Classical and Modern Physics with Calculus 2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Physics Course Requirements:</td>
<td></td>
</tr>
<tr>
<td>PHYS 4046</td>
<td>The Physical Basis of Biological Structure and Function (or equivalent by consent of Physics Dept)</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 4065</td>
<td>Experimental Methods in Molecular Biophysics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 4956</td>
<td>Undergraduate Research in Physics</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credit Hours: 21-29

1 PHYS 4956 Undergraduate Research in Physics must be taken for 3 cr. hrs.

University Policies

- Academic Advising (https://bulletin.marquette.edu/policies/academic-advising/)
- Academic Censure - Undergraduate (https://bulletin.marquette.edu/policies/academic-censure/undergraduate/)
- Academic Integrity (https://bulletin.marquette.edu/policies/academic-integrity/)
- Academic Misconduct (https://bulletin.marquette.edu/policies/academic-misconduct-policy/)
• Academic Program Definitions (https://bulletin.marquette.edu/policies/academic-programs-defined/)
• Academic Standing (https://bulletin.marquette.edu/policies/academic-standing/)
• Accelerated Degree Programs (https://bulletin.marquette.edu/policies/accelerated-degree-programs/)
• Advanced Standing Credit - Undergraduate (https://bulletin.marquette.edu/policies/advanced-standing-undergraduate/)
• Attendance - Undergraduate (https://bulletin.marquette.edu/policies/attendance/undergraduate/)
• Audit - Undergraduate (https://bulletin.marquette.edu/policies/audit/)
• Awarding Diplomas and Certificates (https://bulletin.marquette.edu/policies/awarding-diplomas-certificates/)
• Background Checks, Drug Testing (https://bulletin.marquette.edu/policies/background-checks-drug-testing/)
• Class Rank (https://bulletin.marquette.edu/policies/class-rank/)
• Classification - Undergraduate (https://bulletin.marquette.edu/policies/classification-undergraduate/)
• Commencement (https://bulletin.marquette.edu/policies/commencement/)
• Conferral of Degrees and Certificates (https://bulletin.marquette.edu/policies/conferral-degrees-certificates/)
• Course Levels (https://bulletin.marquette.edu/policies/course-levels/)
• Credit Hour (https://bulletin.marquette.edu/policies/credit/)
• Credit Load - Undergraduate (https://bulletin.marquette.edu/policies/credit-load/undergraduate/)
• Examinations (Midterm and Final) - Undergraduate (https://bulletin.marquette.edu/policies/examinations-midterm-final-undergraduate/)
• Faculty Grading (https://bulletin.marquette.edu/policies/faculty-grading/)
• Family Education Rights and Privacy Act-FERPA (https://bulletin.marquette.edu/policies/ferpa/)
• Grade Appeals (https://bulletin.marquette.edu/policies/grade-appeals/)
• Grading System - Undergraduate and Health Science Professional (https://bulletin.marquette.edu/policies/grading-system/undergraduate-healthscienceprofessional/)
• Graduation - Undergraduate (https://bulletin.marquette.edu/policies/graduation/undergraduate/)
• Immunization and Tuberculosis Screening Requirements (https://bulletin.marquette.edu/policies/immunization-and-tuberculosis-screening/)
• Last Date of Attendance/Activity (https://bulletin.marquette.edu/policies/last-date-of-attendance-activity/)
• Major and Minor Declaration - Undergraduate (https://bulletin.marquette.edu/policies/major-declaration/)
• Medical Withdrawal (https://bulletin.marquette.edu/policies/medical-withdrawal/)
• Military Call to Active Duty or Training (https://bulletin.marquette.edu/policies/militarycall-active-duty-training/)
• Non-Degree Undergraduate Students (https://bulletin.marquette.edu/policies/non-degree-undergraduate-students/)
• Readmission - Undergraduate (https://bulletin.marquette.edu/policies/readmission/)
• Registration - Undergraduate (https://bulletin.marquette.edu/policies/registration/undergraduate/)
• Repeated Courses - Undergraduate (https://bulletin.marquette.edu/policies/repeated-courses/undergraduate/)
• Second Language Course Placement - Undergraduate (https://bulletin.marquette.edu/policies/second-language-course-placement-undergraduate/)
• Second/Additional Bachelor Degree (https://bulletin.marquette.edu/policies/second-additional-bachelor-degree/)
• Student Data Use and Privacy (https://bulletin.marquette.edu/policies/student-data-use-privacy/)
• Study at Other Institutions - Undergraduate (https://bulletin.marquette.edu/policies/study-institutions/)
• Transcripts-Official (https://bulletin.marquette.edu/policies/transcripts-official/)
• Transfer (Internal) to Another Undergraduate College within the University (https://bulletin.marquette.edu/policies/transfer-internal-another-undergraduate-college-within-university/)
• Transfer Course Credit - Undergraduate (https://bulletin.marquette.edu/policies/transfer-course-credit-policy/undergraduate/)
• Withdrawal - Undergraduate (https://bulletin.marquette.edu/policies/withdrawals/undergraduate/)

College of Arts and Sciences Policies

• Absences from Final Examinations (https://bulletin.marquette.edu/arts-sciences/policies/absences-final-examinations/)
• Academic Dismissal/Probation/Academic Alert (CAA) (https://bulletin.marquette.edu/arts-sciences/policies/dismissal-probation-alert/)
• Academic Integrity (https://bulletin.marquette.edu/arts-sciences/policies/academic-integrity/)
• Advisers (https://bulletin.marquette.edu/arts-sciences/policies/advisers/)
• Attendance (https://bulletin.marquette.edu/arts-sciences/policies/attendance/)
• Credit Overload (https://bulletin.marquette.edu/arts-sciences/policies/credit-overload/)
• Degrees Offered (https://bulletin.marquette.edu/arts-sciences/policies/degrees-offered/)
• Elective Courses (https://bulletin.marquette.edu/arts-sciences/policies/elective-courses/)
• Grade Minimums (https://bulletin.marquette.edu/arts-sciences/policies/grade-minimums/)
• Independent Study Courses (https://bulletin.marquette.edu/arts-sciences/policies/independent-study-courses/)

Biophysics, Minor

• Biochemistry, Minor
• Biophysics, Minor

Health Science Professional, College of
• Interdisciplinary Programs (https://bulletin.marquette.edu/arts-sciences/policies/interdisciplinary-programs/)
• Majors and Minors (https://bulletin.marquette.edu/arts-sciences/policies/majors-minors/)
• Transfer Credit Policy (https://bulletin.marquette.edu/arts-sciences/policies/transfer-credit-policy/)