

# CHEMISTRY MAJOR

## MAJOR OBJECTIVES

In addition to fulfilling the Science-Mathematics Departmental objectives:

- Students majoring in **Biochemistry, Biology, Chemistry and Natural Sciences** are expected to:
  - Formulate questions about nature that are amendable to scientific investigations
  - Utilize current information retrieval technology to effectively search the scientific literature and to be conversant with current developments
  - Apply modern approaches, techniques and instrumentation in designing and conducting experiments
  - Use appropriate software packages for instrumental control and data manipulation

## Important Notes

- 40% of major requirements must be completed at Judson.
- At least 18 hours of major requirements must be upper division.

## Gen Eds Required by Major

- Any Mathematics course of 3 hours or more (fulfills Gen Ed Mathematics Requirement)
- Any Science course (with Lab) of 4 hours or more (fulfills Gen Ed Science Requirement)
- SCM319 Junior Science Seminar (1 c.h.) (fulfills Gen Ed GEN301 Requirement)

## Major Requirements

| Code   | Title                            | Hours |
|--|----------------------------------|-------|
| <b>Chemistry</b>                                   |                                  |       |
| CHM153   | General Chemistry I w/Lab        | 4     |
| CHM154   | General Chemistry II w/Lab       | 4     |
| CHM255   | Analytical Chemistry w/Lab       | 5     |
| CHM257   | Organic Chemistry I w/Lab        | 5     |
| CHM258   | Organic Chemistry II w/Lab       | 5     |
| CHM355   | Physical Chemistry I             | 3     |
| CHM356   | Physical Chemistry II            | 3     |
| <b>Chemistry Elective</b>                          |                                  |       |
| Select 3 hours of electives from the following:    |                                  | 3     |
| BCM358   | General Biochemistry I w/Lab     |       |
| BCM471   | General Biochemistry II w/Lab    |       |
| CHM290/490   | Readings in Chemistry            |       |
| CHM188/288/3                                       | Directed Research                |       |
|  | Biochemistry Elective            |       |
|  | Chemistry Elective               |       |
| <b>Biology</b>                                     |                                  |       |
| BIO171   | Principles of Biology w/Lab      | 4     |
| Select four hours of electives from the following: |                                  | 4     |
| BIO172   | Prin of Organismal Biology w/Lab |       |
| BIO177   | Environmental Science w/Lab      |       |
| SAP3**   | Dpt-approved course <sup>1</sup> |       |
| <b>Physics</b>                                     |                                  |       |

|                     |   |              |
|---------------------|---|--------------|
| PHY237              | General Physics I w/Lab   | 4            |
| PHY238              | General Physics II w/Lab  | 4            |
| <b>Mathematics</b>  |   |              |
| MAT211              | Functions and Calculus I  | 3-5          |
| or MAT215           | Calculus w/Analytic Geometry I                                  |              |
| MAT216              | Calculus w/Analytic Geometry II (or approved Math 3-4 elective) |              |
| <b>SCM Seminars</b> |   |              |
| SCM219              | Sophomore Science Seminar                                       | 1            |
| SCM319              | Junior Science Seminar  | 1            |
| SCM419              | Senior Science Seminar  | 1            |
| <b>Total Hours</b>  |   | <b>57-60</b> |

<sup>1</sup> Shedd Aquarium, Morton Arboretum, Au Sable Institute of Environmental Studies, etc.

## Bachelor of Science in Chemistry (Four-Year Plan)

Academic planning is the student's responsibility. This Graduation Plan is designed to be a guide to assist students as they plan their course selections. This is only a suggested schedule, and is not a substitute for a student's Degree Audit, nor the Program Requirements in the Judson University Catalog. Actual course selections should be made with the advice and approval of an academic advisor. Students should become familiar with the catalog in effect at the time at which they entered the institution. Course requirements and sequencing may vary with AP courses, transfer courses, English/math placement, or other conditions.

A full-time course load for undergraduate students is 12-18 credits per semester. Illinois residents receiving state aid should register for 15 hours per semester.

| Course                 | Title  | Hours        |
|------------------------|--|--------------|
| <b>First Year</b>      |  |              |
| <b>First Semester</b>  |  |              |
| MAT211<br>or MAT215    | Functions and Calculus I<br>or Calculus w/Analytic Geometry I            | 3-5          |
| GEN101                 | Questions of Life: Entering the Judson Conversation (<24 transfer hours) | 1            |
| ESS101                 | Wellness   | 1            |
|                        | Physical Activity course   | 1            |
| CHM153                 | General Chemistry I w/Lab  | 4            |
| BIO171                 | Principles of Biology w/Lab  | 4            |
| <b>Hours</b>           |  | <b>14-16</b> |
| <b>Second Semester</b> |  |              |
| ENG101                 | Expository Writing (or ACT/SAT placement)                                | 3            |
| MAT216                 | Calculus w/Analytic Geometry II  | 4            |
| CHM154                 | General Chemistry II w/Lab   | 4            |
|                        | Biology Elective <sup>1</sup>  | 4            |
| <b>Hours</b>           |  | <b>15</b>    |
| <b>Second Year</b>     |  |              |
| <b>First Semester</b>  |  |              |
| ENG102                 | Critical Thinking and Writing (or ACT/SAT placement)                     | 3            |
| BST110                 | Intro to the Christian Bible   | 3            |
| CHM257                 | Organic Chemistry I w/Lab  | 5            |
| SCM219                 | Sophomore Science Seminar  | 1            |
| PHY237                 | General Physics I w/Lab  | 4            |
| <b>Hours</b>           |  | <b>16</b>    |

## 2 Chemistry Major

### Second Semester

|              |  |           |
|--------------|--|-----------|
| THS110       | Christian Faith: Understanding and Application | 3         |
| PHY238       | General Physics II w/Lab                       | 4         |
| CHM258       | Organic Chemistry II w/Lab                     | 5         |
| Any Elective |  | 3         |
| <b>Hours</b> |  | <b>15</b> |

### Third Year

#### First Semester

|                                  |  |           |
|----------------------------------|--|-----------|
| PSY111<br>or SOC151              | Introduction to Psychology<br>or Introduction to Sociology | 3         |
| Gen Ed Biblical Studies Elective |  | 3         |
| SPC120                           | Foundations of Speech                                      | 3         |
| BCM358                           | General Biochemistry I w/Lab                               | 4         |
| <b>Hours</b>                     |  | <b>13</b> |

#### Second Semester

|  |  |           |
|--|--|-----------|
| Gen Ed Visual and Performing Arts Elective |  | 3         |
| HIS261<br>or HIS262                        | History of Civilization I<br>or History of Civilization II | 3         |
| SCM319                                     | Junior Science Seminar <sup>2</sup>                        | 1         |
| CHM255                                     | Analytical Chemistry w/Lab                                 | 5         |
| Any Elective                               |  | 3         |
| <b>Hours</b>                               |  | <b>15</b> |

### Fourth Year

#### First Semester

|                                 |  |           |
|---------------------------------|--|-----------|
| GEN401                          | The Good Life: Continuing the Conversation | 3         |
| SCM419                          | Senior Science Seminar                     | 1         |
| CHM355                          | Physical Chemistry I                       | 3         |
| Chemistry Elective <sup>1</sup> |  | 4         |
| Any Electives                   |  | 6         |
| <b>Hours</b>                    |  | <b>17</b> |

#### Second Semester

|               |                                  |           |
|---------------|----------------------------------|-----------|
| MAT311        | Probability and Statistics w/Lab | 4         |
| HIS261        | History of Civilization I        | 3         |
| CHM356        | Physical Chemistry II            | 3         |
| Any Electives |                                  | 6         |
| <b>Hours</b>  |                                  | <b>16</b> |

**Total Hours** 121-123

1 see major audit

2 GEN301 equivalent