

# CHEMISTRY, BACHELOR OF SCIENCE WITH A CONCENTRATION IN CHEMISTRY EDUCATION

To obtain a B.S. with a major in Chemistry and a concentration in Chemistry Education, a student must fulfill university, college, and departmental requirements. Minimum hour requirements follow:

- 46 hours of University General Education courses
- 59 hours of major courses
- Elective hours as required to total 120 hours

TOTAL HOURS: 120 plus the optional 39 hour concentration

## Requirements

A Bachelor of Science Degree in Chemistry with a Concentration in Education requires a minimum of 39 credits of course work in Chemistry and a minimum of 39 credits in the College of Education.

| Code  | Title  | Credits |
|---|--|---------|
| <b>Chemistry Requirements</b>                             |  |         |
| CHEM 1180 & CHEM 1184                                     | GENERAL CHEMISTRY I and GENERAL CHEMISTRY I LABORATORY   | 4       |
| CHEM 1190 & CHEM 1194                                     | GENERAL CHEMISTRY II and GENERAL CHEMISTRY II LABORATORY | 4       |
| CHEM 2250   | ORGANIC CHEMISTRY I                                      | 3       |
| CHEM 2260   | ORGANIC CHEMISTRY II                                     | 3       |
| CHEM 2274   | ORGANIC CHEMISTRY LABORATORY                             | 2       |
| CHEM 2400 & CHEM 2404                                     | QUANTITATIVE ANALYSIS and QUANTITATIVE ANALYSIS LAB      | 4       |
| CHEM 2500   | INTRODUCTION TO INORGANIC CHEMISTRY                      | 3       |
| CHEM 3350 & CHEM 3354                                     | PHYSICAL CHEMISTRY I and PHYSICAL CHEMISTRY I LABORATORY | 4       |
| CHEM 3360   | PHYSICAL CHEMISTRY II                                    | 3       |
| CHEM/BIOLOG 4650  | BIOCHEMISTRY I (with the following lab)                  | 3       |
| CHEM/BIOLOG 4654  | BIOCHEMISTRY I LABORATORY                                | 1       |
| <b>Advanced Courses</b>                                   |  |         |
| Select 5 credit hours from advance courses (listed below) |  | 5       |
| Total Credits   |  | 39      |

| Code                    | Title                            | Credits |
|-------------------------|----------------------------------|---------|
| <b>Advanced Courses</b> |                                  |         |
| <b>Analytical</b>       |                                  |         |
| CHEM 3030               | ENVIRONMENTAL CHEMISTRY          | 3       |
| CHEM 3414               | INSTRUMENTAL METHODS             | 1       |
| CHEM 3424               | SPECTROMETRIC CHARACTERIZATIONS  | 1       |
| CHEM 4400               | INSTRUMENTAL ANALYSIS            | 3       |
| CHEM 4404               | INSTRUMENTAL ANALYSIS LABORATORY | 1       |
| <b>Biochemistry</b>     |                                  |         |
| CHEM/BIOLOG 4660        | BIOCHEMISTRY II                  | 3       |
| CHEM/BIOLOG 4664        | BIOCHEMISTRY II LABORATORY       | 1       |

|                       |  |     |
|-----------------------|--|-----|
| CHEM 4670             | PROTEIN PURIFICATION AND CHARACTERIZATION          | 2   |
| <b>Inorganic</b>      |  |     |
| CHEM 3514             | INORGANIC PREPARATIONS                             | 1   |
| CHEM 4500             | ADVANCED INORGANIC CHEMISTRY                       | 3   |
| CHEM 4510             | SOLID STATE INORGANIC CHEMISTRY                    | 3   |
| CHEM 4540             | GEOCHEMISTRY                                       | 3   |
| <b>Medicinal</b>      |  |     |
| CHEM 3710             | ESSENTIALS OF MEDICINAL CHEMISTRY                  | 3   |
| <b>Organic</b>        |  |     |
| CHEM 3210             | INTRODUCTION TO MOLECULAR MODELING                 | 3   |
| CHEM 4230             | ADVANCED ORGANIC CHEMISTRY - SYNTHESIS             | 3   |
| CHEM 4240             | ADVANCED ORGANIC CHEMISTRY - MECHANISM             | 3   |
| CHEM 4250             | ADVANCED ORGANIC CHEMISTRY: MECHANISM AND MODELING | 4   |
| <b>Physical</b>       |  |     |
| CHEM 3364             | PHYSICAL CHEMISTRY II LABORATORY                   | 1   |
| <b>Polymer</b>        |  |     |
| CHEM 4310             | POLYMER CHEMISTRY                                  | 3   |
| <b>Research</b>       |  |     |
| CHEM 4950             | CHEMISTRY PROJECTS                                 | 1   |
| CHEM 4960             | CHEMISTRY PROBLEMS                                 | 1-3 |
| <b>Internship</b>     |  |     |
| CHEM 4810             | CHEMISTRY INTERNSHIP                               | 1-6 |
| <b>Special Topics</b> |  |     |
| CHEM 4930             | SPECIAL TOPICS IN CHEMISTRY                        | 1-3 |

## Educator Preparation Program Requirements

| Code          | Title  | Credits |
|---------------|--|---------|
| TED 2100      | EDUCATIONAL FOUNDATIONS                                      | 3       |
| TED 2200      | HUMAN RELATIONS FOR BIAS-FREE CLASSROOMS                     | 3       |
| TED 2380      | DEVELOPMENT AND LEARNING IN ADOLESCENCE                      | 3       |
| TED 2400      | PLANNING FOR EFFECTIVE TEACHING                              | 6       |
| SPED 3800     | DIFFERENTIATION AND INCLUSIVE PRACTICES                      | 3       |
| TED 3550      | SECONDARY CLASSROOM MANAGEMENT                               | 3       |
| TED 3690      | LITERACY AND LEARNING  | 3       |
| TED 4000      | SPECIAL METHODS IN THE CONTENT AREA                          | 3       |
| TED 4600      | CLINICAL PRACTICE AND SEMINAR: ELEMENTARY OR SECONDARY LEVEL | 12      |
| Total Credits |  | 39      |

## Required Cognate Courses

| Code  | Title   | Credits   |
|---|---|-----------|
| MATH 1950                                     | CALCULUS I  | 5         |
| MATH 1960                                     | CALCULUS II   | 5         |
| <b>Select one of the following sequences:</b> |   | <b>10</b> |
| <b>Sequence I</b>                             |   |           |
| PHYS 2110 & PHYS 1154                         | GENERAL PHYSICS I - CALCULUS LEVEL and GENERAL PHYSICS LABORATORY I |           |
| PHYS 2120 & PHYS 1164                         | GENERAL PHYSICS-CALCULUS LEVEL and GENERAL PHYSICS LABORATORY II    |           |

**Sequence II**

|                          |  |
|--------------------------|--|
| PHYS 1110<br>& PHYS 1154 | GENERAL PHYSICS I WITH ALGEBRA<br>and GENERAL PHYSICS LABORATORY I |
| PHYS 1120<br>& PHYS 1164 | GENERAL PHYSICS<br>and GENERAL PHYSICS LABORATORY II               |
| <hr/>                    |  |
| Total Credits            | 20   |

**Additional Information**

To graduate certified to teach high school chemistry, a biology and geology course are required. BIOL 1450 is required and CHEM 4540/GEOL 1104 are recommended.

To graduate with an ACS certified degree, see your chemistry advisor for proper course selection.