Student Name:
UID:
The Bachelor of Science with major in Science Education is a degree awarded by the College of Liberal Arts and Sciences (CLAS). This major, with emphasis in Biology, Chemistry, Earth Science, or Physics, is available to all students enrolled in CLAS, but is designed -- when completed in conjunction with a Science Education Teacher Education Program -- to satisfy content course requirements for teaching two or more science subjects in grades 5-12.
A fifth emphasis, Bachelor of Science in Science Education (All Science) is available only to students who have been admitted to the Teacher Education Program.

## Requirements

- Completion of 7-8 semester hours in Science Education; and
- Completion of a minimum 24-27 semester hours in Physics, as listed below, and
- Completion of a minimum 15 semester hours in Biology, Chemistry, or Earth Science; and
- Completion of College of Liberal Arts and Sciences requirements for a bachelor's degree.


## Science Education Course Requirements

Complete the following

| Course | Former | Course Title | Credit | Session/Substitute |
| :---: | :---: | :---: | ---: | ---: |
| SIED:4135 | $097: 135$ | The Nature of Science | $3-4$ s.h. |  |

Societal and Educational Applications (Complete one of the following three)

| Course | Former | Course Title | Credit | Session/Substitute |
| :---: | :---: | :--- | :---: | :---: |
| SIED:4102 | $097: 102$ | Soc Ed App of Earth Sci \& Envir Sci (Fall only) | $3-4$ s.h. |  |
| SIED:4103 | $097: 103$ | Soc Ed App of Biological Sciences (Fall only) | $3-4$ s.h. |  |
| SIED:4106 | $097: 106$ | Soc Ed App of Chemical Concepts (Spring only) | $3-4$ s.h. |  |

Physics Emphasis Course Requirements (Minimum 24-27 s.h.)
Foundations (Complete one of the three following options consisting of two courses)
Foundations Option 1 (Complete both of the following courses) or

| Course | Former | Course Title | Credit | Session/Substitute |
| :---: | :---: | :--- | :--- | :--- |
| PHYS:1611 | 029:081 | Introductory Physics I (Majors) | 4 s.h. |  |
| PHYS:1612 | $029: 082$ | Introductory Physics II (Majors) | 4 s.h. |  |

Foundations Option 2 (Complete both of the following courses) or

| Course | Former | Course Title | Credit | Session/Substitute |
| :---: | :---: | :--- | :--- | :--- |
| PHYS:1511 | 029:011 | College Physics I (Algebra-based) | 4 s.h. |  |
| PHYS:1512 | $029: 012$ | College Physics II (Algebra-based) | 4 s.h. |  |

Foundations Option 3 (Complete both of the following courses).

| Course | Former | Course Title | Credit | Session/Substitute |
| :---: | :---: | :--- | :---: | :---: |
| PHYS:1701 | $029: 027$ | Physics I (Calculus-based) | 4 s.h. |  |
| PHYS:1702 | $029: 028$ | Physics II (Calculus-based) | 4 s.h. |  |

Complete one of the following two courses

| Course | Former | Course Title | Credit | Session/Substitute |
| :---: | :---: | :--- | :---: | :---: |
| PHYS:2703 | $029: 029$ | Physics III (Calculus-based, Fall) | 4 s.h |  |
| PHYS:3710 | $029: 115$ | Intermediate Mechanics (Spring) | 3 s.h. |  |

Science-Education-BS-Physics-Emphasis, page 1 of 3

Complete one of the following two courses

| Course | Former | Course Title | Credit | Session/Substitute |
| :---: | ---: | :--- | ---: | ---: |
| PHYS:1410 | $029: 044$ | Physics of Sound (Spring) | $3-4$ s.h. |  |
| PHYS:1200 | $029: 006$ | Physics of Everyday Experience | 3 s.h. |  |

Astronomy (Complete one of the following three courses)

| Course | Former | Course Title | Credit | Session/Substitute |
| :---: | :---: | :--- | :--- | :--- |
| ASTR:1771 | $029: 061$ | General Astronomy I | 4 s.h. |  |
| ASTR:1070 | $029: 050$ | Stars, Galaxies, \& the Universe | $3-4$ s.h. |  |
| ASTR:1080 | $029: 052$ | Exploration of the Solar System (Spring) | 3 s.h. |  |

Electricity (Complete one of the following two courses)

| Course | Former | Course Title | Credit | Session/Substitute |
| :---: | :---: | :--- | :--- | :--- |
| PHYS:3850 | $029: 128$ | Electronics (Spring) | 4 s.h. |  |
| PHYS:3811 | $029: 128$ | Electricity \& Magnetism (Fall) | 3 s.h. |  |

Society and Educational Applications (Complete the following)

| Course | Former | Course Title | Credit | Session/Substitute |
| :---: | :---: | :---: | :---: | :---: |
| SIED:4105 | $097: 105$ | Soc Ed App of Physical Sciences (Spring only) | $3-4$ s.h. |  |

Additional courses and approved substitutions

| Course | Former | Course Title | Credit | Session/Substitute |
| :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  | Physics total s.h. (=>24) |  |  |

Additional Emphasis Course Requirements (Complete 15 s.h. minimum in at least one of the following three areas)

Biology (Choose minimum 15 s.h. from the following or approved substitutes)

| Course | Former | Course Title | Credit | Session/Substitute |
| :--- | :---: | :--- | :--- | :--- |
| BIOL:1411 | $002: 031$ | Foundations of Biology | 4 s.h. |  |
| BIOL:1412 | $002: 032$ | Diversity of Form and Function | 4 s.h. |  |
| BIOL:2211 | $002: 099$ | Genes, Genomes \& the Human Cond | 3 s.h. |  |
| BIOL:3172 | $002: 131$ | Evolution | 4 s.h. |  |
| HHP:3500 | $027: 130$ | Human Physiology | 3 s.h. |  |
| BIOL:2673 | $002: 134$ | Ecology (Fall) | 3 s.h. |  |
| SIED:4103 | $097: 103$ | Soc Ed App of Biological Sciences (Fall only) | $3-4$ s.h. |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

Chemistry (Choose minimum 15 s.h. from the following or approved substitutes)

| Course | Former | Course Title | Credit | Session/Substitute |
| :--- | :---: | :--- | :--- | :--- |
| CHEM:1110 | $004: 011$ | Principles of Chemistry I | 4 s.h. |  |
| CHEM:1120 | $004: 012$ | Principles of Chemistry II | 4 s.h. |  |
| CHEM:2210 | $004: 121$ | Organic Chemistry I | 3 s.h. |  |
| CHEM:2220 | $004: 122$ | Organic Chemistry II | 3 s.h. |  |
| CHEM:2021 | $004: 021$ | Basic Measurements | 3 s.h. |  |
| SIED:4106 | $097: 106$ | Soc Ed App of Chemical Concepts (Spring only) | $3-4$ s.h. |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

Earth Science (Choose minimum 15 s.h. from the following or approved substitutes)

| Course | Former | Course Title | Credit | Session/Substitute |
| :--- | ---: | :--- | :--- | :--- |
| EES:1040 | $012: 004$ | Evolution and History of Life | 4 s.h. |  |
| EES:1030 | $012: 003$ | Introduction to Earth Science | 4 s.h. |  |
| EES:1050 | $012: 005$ | Introduction to Geology | 4 s.h. |  |
| EES:1080 | $012: 008$ | Introduction to Environmental Science | 4 s.h. |  |
| EES:3000 | $012: 100$ | Geologic Training Assignment (Summer only) | 3 s.h. |  |
| EES:3070 | $012: 107$ | Marine Ecosystems (Fall only) | 3 s.h. |  |
| SIED:4102 | $097: 102$ | Soc Ed App of Earth Sci \& Envir Sci (Fall only) | $3-4$ s.h. |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

This Program Guide is for planning and documentation of program completion. State requirements for licensure and endorsements are subject to change without notice; check with your adviser or the Office of Education Services for updated requirements. Course transfer and substitution may require syllabi or other documentation in addition to transcript. 12/13/2016 TN/DLT.
For additional information, admissions procedures, or advising referral, please contact Office of Education Services, College of Education, N310 Lindquist Center, Iowa City, IA 52242, 319-3355359, FAX: 319-335-5364, edu-educationservices@uiowa.edu, http://www.education.uiowa.edu

