B.S. in Science Education Program Plan (2012)

General Education Requirements (41 credits)
A. Communication Skills (8cr)
- SPED 100 Speech (2cr)
- ENGL 101 or 111 Fresh Comp (3cr)
- ENGL 102, 112, or 113 Fresh Lit (3 cr)
B. Analytical Reasoning (7cr)
- MATH 153 Calc I (4cr) P:Math 121
- STAT 320 Stats (3cr) P:Math 120
C. Health & Phys Well-being (2 cr)
- Any Approved Course (2 cr)
D. Humanities and Fine Arts (9cr)
- HIST 210 Modern World (3 cr)
- LIT XXX Any Lit Course (3cr)
- Other Creative/Perform Arts (1-3cr)
- Other Humanities & Fine Arts (0-2cr)
E. Social & Behavioral Science (9cr)
- PSYC 110 General Psych (3cr)
- POLS 210 Government (3cr)
- Other Social & Behavioral (3cr)
F. Natural Sciences (4cr)
- BIO 111 Sci, Soc, & Env (4cr)*
  Note: Students must complete one life science and one physical science course.
G. Technology (2cr)
- Any Approved Course (2cr)
  Note: BIO 210 & NANO 101 are recommended

Professional Education (13 credits)
- EDUC 303 Educational Psych (3cr)*
- EDUC 326 Foundations of Education (2cr)*
- EDUC 336 Multiculturalism (2cr)*
- EDUC 376 Cross-cultural Exp (1cr) P:BI
- EDUC 382 Secondary Read & Lang Dev (2cr) P:BI
- SPED 430 Inclusion (3cr)*

Science, Technology, & Math Education (30 credits)
- STMED 101 Intro Math & Sci Ed (2cr)* (Fall Only)
- STMED 185 Pre-Student Teaching (1cr)* (Spr Only)
- STMED 260 Curric, Methods, & Assess (3cr)*
- STMED 360 Pre-Student Teaching (1cr)* P:BI
- STMED 390 Lab and Classroom Mgmt (3cr) P:BI
- STMED 460 Teaching Methods (3cr)* P:BI
- STMED 401 Capstone (1cr)* (Fall Only) P:BI
- SCIED 409-424 Student Teaching (16cr)* P:BII

Science Courses (36-46 credits)
Students must complete one major and at least one other major or minor science certification.

Major Teaching Certifications:
1. Broadfield Science Major Certification 601 (28 credits)
   - BIO 153 Organismal Bio (4cr)* (Fall Only)
   - CHEM 135 College Chem I (5cr) P:Math 120
   - CHEM 136 College Chem II (5cr) P:Chem 135
   - PHYS 241 College Phys I (5cr) P:Math 153
   - PHYS 242 College Phys II (5cr) P:Phys 241
   - PHYS 255 Meteorology (2cr)
   - PHYS 258 Intro Geology (2cr)*

2. Biology Major Certification 605 (28 credits)
   - BIO 135 Organismal Biology (4cr)* (Fall Only)
   - BIO 136 Molecular Cell (5cr) (Spr Only)
   - BIO 332 Genetics (3cr) P:Bio 135
   - BIO 350 Ecology (3cr) P:Bio 135
   - Additional 13 credits of approved biology electives.

3. Chemistry Major Certification 610 (28 credits)
   - CHEM 135 College Chem I (5cr) P:Math 120
   - CHEM 136 College Chem II (5cr) P:Chem 135
   - CHEM 201 Organic (4cr) P:Chem 135
   - CHEM 331 Quant (3cr) (Fall Only) P:Chem 136
   - Additional 11 cr of approved chemistry electives.

4. Physics Major Certification 625 (28 credits)
   - PHYS 241 College Physics I (5cr) P:Math 153
   - PHYS 242 College Physics II (5cr) P:Phys 241
   - PHYS 250 Light&Color (3cr) P:Math 118
   - ELEC 260 Elec Circ (3cr) P:Phys241, Math153
   - Additional 12 cr of approved physics electives.

Minor Teaching Certifications:
1. Biology Minor Certification 605 (18 credits)
   - BIO 135 Organismal Biology (4cr)* (Fall Only)
   - BIO 136 Molecular Cell (5cr) (Spring Only)
   - Additional 9 cr of approved biology electives.

2. Chemistry Minor Certification 610 (18 credits)
   - CHEM 135 College Chem I (5cr) P:Math 120
   - CHEM 136 College Chem II (5cr) P:Chem 135
   - Additional 8 cr of approved chemistry electives.

3. Physics Minor Certification 625 (18 credits)
   - PHYS 241 College Physics I (5cr) P:Math 153
   - PHYS 242 College Physics II (5cr) P:Phys 241
   - Additional 8 cr of approved physics electives.

4. Earth & Space Sci Minor Certification 635 (18 credits)
   - PHYS-151 Astronomy (2cr)
   - PHYS-255 Meteorology (2cr)
   - PHYS-258 Introductory Geology (2cr)*
   - PHYS-358 Soil Con (4cr) P:Chem-135, Phys-258
   - GEOG-251 Intro to Geography & GIS (4cr)
   - Additional 4 cr of approved earth & space science electives.

5. Environmental Sci Minor Certification 615 (18 credits)
   - BIO-242 Botany (4cr)
   - BIO 350 Ecology (3cr)
   - BIO-351 Ecology Laboratory (2cr)
   - PHYS-258 Introductory Geology (2cr)*
   - PHYS-358 Soil Con (4cr) P:Chem-135, Phys-258
   - Additional 3 cr of approved env. sci. electives.

Minimum Credits for Graduation: 120

*Students must earn a C or higher in School of Education courses and introductory science courses.
Approved Science Electives (2012)
The following courses are approved as electives for the biology, chemistry, physics, environmental science, and earth and space science certifications. Other courses not listed below may be approved by the program director upon request.

**Biology (605) Certification**

**Highly Recommended Electives:**
- BIO 332 Genetics (3cr) *Required for Major Certification
- BIO 350 Ecology (3cr) *Required for Major Certification
- BIO 489 Advanced Biology Experience (1-4cr)
- BIO 234 Anatomy & Physiology (4cr)
- BIO 242 Botany (4cr)
- BIO 306 General Microbiology (4cr)

**Recommended Electives:**
- BIO 132 Human Biology (4cr)
- BIO 210 Biotechnology (2cr)
- BIO 235 Molecular Cell II (4cr)
- BIO 252 Zoology (4cr)
- BIO 255 The Biology of Fly Fishing (2cr)
- BIO 260 Ichthyology (4cr)

**Note:** You CANNOT receive credit for both BIO 132 and BIO 234.

**Chemistry (610) Certification**

**Highly Recommended Electives:**
- CHEM 201 Organic (4cr) *Required for Major Certification
- CHEM 331 Quant (3cr) (Fall Only) *Required for Major Certification
- CHEM 489 Advanced Chemistry Experience (1-4cr)
- CHEM 301 Physical Chem Lecture (3cr)
- CHEM 303 Physical Chem Lab (1cr)
- CHEM 311 Biochemistry (4cr)
- CHEM 335 Instrumental Methods (3cr)
- CHEM 353 Environmental Chemistry (3cr)

**Recommended Electives:**
- CHEM 204 Organic II Lecture (3cr)
- CHEM 206 Organic II Lab (1cr)
- CHEM 315 Food Chemistry (3cr)
- CHEM 341 Chemistry of Materials (4cr)
- NANO 101 Intro to Nanotechnology (2cr)

**Physics (625) Certification**

**Highly Recommended Electives:**
- PHYS 250 Light & Color (3cr) *Required for Major Certification
- ELEC 260 Elec Circ (3cr) *Required for Major Certification
- PHYS 489 Advanced Physics Experience (1-4cr)
- TRANS 204 Energy Technology (2cr)
- TRANS 205 Energy Technology Lab (1cr)
- PHYS 321 Statics & Strength of Mat (4cr)
- MECH 290 Mechanics of Solids (3cr)

**Recommended Electives:**
- PHYS 151 Astronomy (3cr)
- PHYS 327 Solid State Physics (3cr)
- PHYS 329 Atomic & Nuclear Physics (3cr)
- POWER 103 Power Mechanics (2cr)
- POWER 260 Intro to Fluid Power (2cr)
- ELEC 272 Solid State Electronics (3cr)
- ELEC 281 Circuit Devices and Logic (3cr)

**Note:** You CANNOT receive credit for both PHYS 321 and MECH 290.

**Environmental Science (615) Certification**

**Highly Recommended Electives:**
- BIO-252 Zoology (4cr)
- BIO-352 Plant Ecology (4cr)
- BIO-444 Problems in Env. Sustainability (3cr), P: BIO 350
- BIO-489 Advanced Experience (1-4cr) *Related to Env. Sci.
- GEOG-251 Intro to Geography and GIS (4cr)
- CHEM-353 Environmental Chemistry (3cr)

**Recommended Electives:**
- BIO-255 The Biology of Fly Fishing (2cr)
- BIO-260 Ichthyology-Wisconsin Fishes (4cr)
- BIO-322 Plant Pathology (3cr)
- BIO-324 Vascular Plant Taxonomy (3cr)
- BIO-343 Plant Physiology (4cr)

**Earth and Space Science (635) Certification**

**Highly Recommended Electives:**
- GEOG-104 World Geography (3)
- GEOG-351 Intermediate GIS (4cr), P: GEOG-251
- PHYS-489 Advanced Experience (1-4) *Related to Earth & Space Science