

## BROADFIELD NATURAL SCIENCE MAJOR

### College of Education and Human Services

1. Minimum Math Requirement:  
Math 67-104 (will meet Math USP requirement) AND Math 67-106 OR test out of these classes.  
Math 172 required for Physics 192.
2. Minor Requirement (complete one of the following minors):
  - Biology (24 credits)
  - Chemistry (22 credits)
  - Earth Science (see Geology Dept. for this minor) (33 credits including Physics/Ast.103)
  - Physics (23 credits) (requires Physics 191/192 and Math 172)
 See the University Bulletin for a complete listing of minor requirements
3. Completion of a minimum of 8 credits in the following areas: Biology, Chemistry, Earth Science and Physics (*pre-reqs. in parentheses*)

Biology	Chemistry	Earth Science** <i>(choose one area either Geology or Geography)</i>	Physics	Cr. Left
Biology 105 (4cr) _____ <b>AND</b> Biology 230 (4cr) _____ <i>(Bio 105)</i> <b>or</b> Biology 231 (4cr) _____ <i>(Bio 105)</i>  Do <b>NOT</b> take BIO 104!	Chemistry 105 (5cr) <i>(Math 104 co-req.)</i> _____  Chemistry 106 (5cr) <i>(Math 104 w/C and Chem 105 w/C)</i> _____	<u><b>Geology</b></u> Geology 150 or 102 (4cr), or 110 (5cr)** _____ <b>AND</b> Geology 109 or 112 (4cr) _____ **Earth Science minors need GEOL 150 and 109  <u><b>OR</b></u>  <u><b>Physical Geography</b></u> Geography 121 (4cr) _____ Geography 221 (4cr) _____	Physics/Astronomy 171 (Fall) (5cr) <i>(Math 106 or 108 or equiv.)</i> _____ Physics/Astronomy 172 (Spring) (5cr) <i>(Physics 171)</i> _____  <b>OR</b> Physics/Astronomy 191 (Fall) (5cr)** <i>(Math 171)</i> _____ Physics/Astronomy 192 (Spring) (5cr)** <i>(Physics 191 &amp; concur Math 172)</i> _____ *** Required for Physics minor	_____

4. Concentration Requirement: completion of a **minimum of 12 credits\*** in Biology, Chemistry, Earth Science or Physics in one area other than the minor. \*See information on back.  
**Add the course(s) in one column that is not the minor area:**

Biology	Chemistry	Earth Science <i>(choose one Physics/Astronomy course below)</i>	Physics	Cr. Left
Biology 230 (4cr) <b>AND</b> Biology 231 (4cr) _____  Take which ever course has not yet been completed	Chemistry 234 (1cr) Chemistry 235 (3cr) <i>(Chem 106 w/C; co-req. Chem 234)</i> _____	Physics/Astronomy 103 (Fall) (4 cr) _____ <b>OR</b> Physics/Astronomy 104 (Spring) (4 cr) _____  <i>(Pre-req. for Phys/Ast 103, 104, 113, and 114: PBIS level course or Math 103 w/C; or test into Math 104 or higher)</i>	Physics/Astronomy 113 (Fall) (3cr) Or Physics/Astronomy 103 (Fall) (4cr) (Credit cannot be earned for both Phys/Ast 103 and 113) _____ <b>OR</b> Physics/Astronomy 114 (Spring) (3cr) Physics/Astronomy 104 (Spring) (4cr) (Credit cannot be earned for both Phys/Ast 104 and 114) _____	_____

Remaining courses for minor:

_____	(____)	_____	(____)	Total Credits: <span style="border: 1px solid black; display: inline-block; width: 40px; height: 30px; vertical-align: middle;"></span>
_____	(____)	_____	(____)	
_____	(____)	_____	(____)	

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Environmental Education Requirement will be met by one of the following courses:

Biology 349 (required for Biology minors), Geography 121, 211, OR Geology 102, 109, 110 or 150

**\*Secondary Education Broadfield Natural Science Major**

“A person with a broadfield science license may teach any science class at the early adolescence-adolescence level, up through grade 10, and any basic science class in grades 11-12 that is not: A) part of the college preparatory sequence; B) an advance placement course; C) an elective course with more depth of content than basic courses. To teach a course under the criteria in A, B or C, the teacher must have a concentration in that subject area.”<sup>1</sup>

For clarification, students will complete a minimum of 12 credits in a subject subcategory to qualify as a concentration (the area chosen for a minor also meets the criteria listed above to teach a course under A, B and C). Courses must be chosen from the list of approved courses in that subject area. Courses must be natural or physical science courses.

<sup>1</sup>State of Wisconsin Department of Public Instruction Memorandum dated August 5, 2004; Definitions related to PI 34.

**Note:** According to the Wisconsin Department of Public Instruction, a discrete course (e.g. offered for a semester) in a PI 34 subcategory of natural science (e.g. astronomy) offered primarily at the 11-12 grade level would typically be a college preparatory course and not considered a basic course in natural science.

**GPA requirements:** 3.0 minimum Combined gpa (see COEHS website for options if below 3.0); 2.75 major gpa for STEM majors