PHYSICS, MAJOR - TEACHING

Teaching (Code 230-205)

University Requirements

GRADUATION REQUIREMENTS FOR BACCALAUREATE DEGREE

Credit Requirements

- Minimum total for graduation: 120
- Upper division credits (courses numbered 300 and higher): 39
- Liberal Education Core: 36

Academic Concentrations

- Total: 2.00 average
- Resident Major: 2.00 average
- Minor: 2.00 average
- Certificate: 2.00 average

University Residency Requirements

- Minimum total: 30
- Senior year: 23
- Major, Standard, upper division in residence: 12
- Major, Comprehensive, upper division in residence: 21
- Certificate: 25 percent of credits

Procedures Required for Graduation

- Obtain admission to the degree program and/or the College offering it.
- Apply for graduation on CampS.

1 Certain programs exceed this minimum.
2 See special requirements in each College.

Applicability of Credits Toward Graduation

Junior College or Two-Year College Credits. A maximum of 72 semester credits earned in a junior college or two-year college will be accepted as degree credits at UW-Eau Claire.

Extension Credits. Credits earned in credit outreach courses offered by UW-Eau Claire are treated as resident credits. Credits earned in extension courses offered by other units of the University of Wisconsin System are treated as transfer credits. All other (non-UW) extension and correspondence credits are normally limited to one-fourth of the total required for graduation from any curriculum.

WTCS Credits. A maximum of 72 semester credits earned in college parallel programs at Madison Area Technical College, Milwaukee Area Technical College, Nicolet Area Technical College, or Chippewa Valley Technical College may be accepted as degree credits at UW-Eau Claire. A set number of general education courses will be accepted from other technical schools. Occupational and technical courses may also be considered for transfer if the quality and content of the course work from the technical college is judged to be comparable to course work at UW-Eau Claire. Refer to the Transfer Credit Wizard (https://my.uwec.edu/psp/PUBLIC/EMPLOYEE/HRMS/c/EAU_SS_CUSTOM.EAU_TRNCRDWZ.GBL) or contact the UW-Eau Claire Admissions Office for information about the current transfer policy.

USAFI Credit. UW-Eau Claire will accept up to 32 semester credits for work done through the United States Armed Forces Institute, under the provision for non-UW correspondence credit (see Extension Credits above).

Activity Credit (band, chorus, drama, KINS 100-184 courses) Students may count toward graduation no more than one credit of KINS 110-184 courses. Students may count toward graduation no more than four credits earned in any single activity course and no more than 12 credits resulting from any combination of activity courses (excluding KINS 110-184 courses).

Other Restricted Credits. For other University restrictions, see the following: Cooperative Education; Credit by Examination; Satisfactory/Unsatisfactory Registration; Transfer of Credits. College or departmental restrictions may also be placed on Independent Study (399-499 courses), Directed Study (395-495), and other types of credits.

APPLICABILITY OF CREDITS TOWARD GRADUATION

Total degree credit maximum 12
- Major, Standard credit maximum 1 course
- Major, Comprehensive credit maximum 2 courses

Credit by Examination

- Total degree credit maximum ¼ of total
- Major or minor credit maximum ½ of total

Two-Year College Credits

Total degree credit maximum 72 credits

Activity credit (band, chorus, drama, KINS 100-184)

- Total KINS 100-184 maximum 1 credit
- Total Band, chorus, drama maximum 12 credits
- Single course band, chorus, drama maximum 4 credits

Extension credits

- UW-System no maximum
- Other extension/correspondence maximum ¼ of total

USAFI

- USAFI maximum 32 credits

Liberal Education Core

The University of Wisconsin-Eau Claire measures learning outcomes to ensure that its graduates have achieved a liberal education and prepared themselves to contribute to a complex society. Upon graduation, each undergraduate will have met the four learning goals of our liberal education core and the 11 learning outcomes they comprise.

Liberal Education Core Requirements

- a minimum of 36 credits
Knowledge Goal

Knowledge Outcome 1 (K1): Natural Sciences
Two (2) learning experiences
One experience in laboratory science must be selected from either K1 or K2.

Knowledge Outcome 2 (K2): Social Sciences
Two (2) learning experiences
One experience in laboratory science must be selected from either K1 or K2.

Knowledge Outcome 3 (K3): Humanities
Two (2) learning experiences

Knowledge Outcome 4 (K4): Fine Arts
One (1) learning experience

Skills Goal

Skills Outcome 1 (S1): Written and Oral Communication
Two (2) learning experiences
One S1 must meet the University Writing Requirement

Skills Outcome 2 (S2): Mathematics
One (1) learning experience
One S2 to meet the University Mathematics Requirement

Skills Outcome 3 (S3): Creativity
One (1) learning experience

Responsibility Goal

Responsibility Outcome 1 (R1): Equity, Diversity, and Inclusivity
Two (2) learning experiences
One R1 must satisfy Design for Diversity

Responsibility Outcome 2 (R2): Global Perspectives
One (1) learning experience

Responsibility Outcome 3 (R3): Civic and Environmental Issues
One (1) learning experience

Integration Goal

Integration Outcome 1 (I1): Integration
Two (2) learning experiences

Service-Learning Goal

Service-Learning
30 hours

College Degree Requirements

University Requirements in Teacher Education in the College of Education and Human Sciences

College Requirements for Teacher Education

All candidates for teacher education baccalaureate degrees must also meet the following:

1. Liberal Education requirements in the College of Education and Human Sciences.
2. Grade point requirements:

   | Resident | 2.75 average |
   | Total    | 2.75 average |
   | Major    | 2.75 average |
   | Minor (for certification only) | 2.75 average |

3. Residency requirements:

   Minimum Total | 30 credits
   Senior Year | 23 credits
   Major, in upper division courses | 12 credits
   Comprehensive Major, in upper division courses | 21 credits

4. Criteria and requirements for Professional Programs and for Admission to the Professional Semester.
5. Specific requirements of programs offered in the College of Education and Human Sciences. (See the departmental sections of this catalog.)

Early Adolescence Through Adolescence and Early Childhood through Adolescence
(formerly Secondary Education and Special Subjects)

Liberal Education Requirements are listed in the table below

<table>
<thead>
<tr>
<th>K2 (Social Sciences)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 260 Educational Psychology</td>
</tr>
<tr>
<td>AND another learning experience</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>S3 (Creativity)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ES 497 Field Experience Seminar (included in major)</td>
</tr>
<tr>
<td>AND another learning experience</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>R1 (Equity, Diversity, Inclusivity)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ES 385 Social Foundations: Human Relations (included in major)</td>
</tr>
<tr>
<td>AND another learning experience</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>I1 (Integration)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ES 497 Field Experience Seminar (included in major)</td>
</tr>
<tr>
<td>AND another learning experience</td>
</tr>
</tbody>
</table>

Teaching Licensure Requirements - EA-A Licensure

Program Options B and C

These program options are organized around content majors and education courses and are designed to prepare teachers for early adolescence through adolescence (EA-A) teaching or for early childhood through adolescence (EC-A) teaching in selected areas. Each program requires the student to complete:

1. a comprehensive major (at least 60 credits) or a standard major (at least 36 credits) plus one of the following: another standard major (at least 36 credits), or a minor (at least 24 credits), or a certificate (12-18 credits).
   Students choosing another major or minor may choose from the approved majors and minors listed in the table below, but are not required to do so. Students pursuing EA-A licensure are not required to elect a second plan that leads to certification.
2. a professional sequence consisting of teaching methods and related courses. Advising is done through the content major department.
Upon admission to program, candidates are assigned an advisor in education as well.

**Option B: EA-A**  
Early Adolescence through Adolescence Licensure  
Professional Sequence

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ES 212</td>
<td>Initial Teaching Experience in Elementary, Middle, and High School Settings</td>
<td>2</td>
</tr>
<tr>
<td>ES 312</td>
<td>General Methods of Teaching</td>
<td>2</td>
</tr>
<tr>
<td>ES 317</td>
<td>Middle Level Methods and Curriculum</td>
<td>2</td>
</tr>
<tr>
<td>ES 318</td>
<td>Teacher Assisting</td>
<td>1</td>
</tr>
<tr>
<td>ES 328</td>
<td>Content Area Reading and Study Strategies</td>
<td>2</td>
</tr>
<tr>
<td>ES 385</td>
<td>Social Foundations: Human Relations</td>
<td>3</td>
</tr>
</tbody>
</table>

Prescribed special methods course(s) (see approved majors and minors below)

- ES 445 & ES 470: Student Teaching in Middle Level Education and Student Teaching in Secondary Education  
- ES 490: Historical, Legal, and Philosophical Foundations of Education  
- ES 497: Field Experience Seminar  
- SPED 300: Inclusive Practices for Secondary Educators

Approved Majors and Minors for Option B

### Comprehensive Majors

<table>
<thead>
<tr>
<th>Code</th>
<th>Prescribed Methods Course</th>
<th>Additional Requirement</th>
<th>Praxis II Content Test Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 540-006</td>
<td>ENGL 319, ENGL 419</td>
<td></td>
<td>ETS 5038</td>
</tr>
<tr>
<td>Earth and Space Science 160-015</td>
<td>ES 360 (F)</td>
<td></td>
<td>ETS 5435</td>
</tr>
<tr>
<td>Mathematics 180-002</td>
<td>ES 357</td>
<td></td>
<td>ETS 5061</td>
</tr>
<tr>
<td>Physics 1 Physical Science 240-004</td>
<td>ES 360 (F)</td>
<td>BIOL 180 or GEOG 178</td>
<td>ETS 5435</td>
</tr>
<tr>
<td>Physics-Mathematics 1 210-003</td>
<td>ES 357 (Sp) and ES 360 (F)</td>
<td>BIOL 180 or GEOG 178</td>
<td>ETS 5161 and ETS 5435 (regardless of emphasis)</td>
</tr>
<tr>
<td>Physics Emphasis 210-004</td>
<td>ES 357 (Sp) and ES 360 (F)</td>
<td>BIOL 180 or GEOG 178</td>
<td></td>
</tr>
<tr>
<td>Mathematics Emphasis 210-004</td>
<td>ES 357 (Sp) and ES 360 (F)</td>
<td>BIOL 180 or GEOG 178</td>
<td></td>
</tr>
<tr>
<td>Social Studies 500-XXX</td>
<td>ES 356</td>
<td>ECON 103, BIOL 180 or GEOG 178</td>
<td>ETS 5081</td>
</tr>
</tbody>
</table>

### Majors

<table>
<thead>
<tr>
<th>Code</th>
<th>Prescribed Methods Course</th>
<th>Additional Requirements</th>
<th>Praxis II Content Test Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biology 1 080-205</td>
<td>ES 360 (F)</td>
<td>BIOL 180 or GEOG 178</td>
<td>ETS 5435</td>
</tr>
<tr>
<td>Chemistry 1 100-204</td>
<td>ES 360 (F)</td>
<td>BIOL 180 or GEOG 178</td>
<td>ETS 5435</td>
</tr>
<tr>
<td>Economics 360-204</td>
<td>ES 356</td>
<td>ECON 103, BIOL 180 or GEOG 178</td>
<td>ETS 5081</td>
</tr>
<tr>
<td>English 540-210</td>
<td>ENGL 319, ENGL 419</td>
<td></td>
<td>ETS 5038</td>
</tr>
<tr>
<td>History 380-206</td>
<td>ES 356</td>
<td>ECON 103, BIOL 180 or GEOG 178</td>
<td>ETS 5081</td>
</tr>
<tr>
<td>Mathematics 180-207</td>
<td>ES 357</td>
<td>BIOL 180 or GEOG 178</td>
<td>ETS 5161</td>
</tr>
<tr>
<td>Physics 1 230-205</td>
<td>ES 360 (F)</td>
<td>BIOL 180 or GEOG 178</td>
<td>ETS 5435</td>
</tr>
<tr>
<td>Political Science 420-203</td>
<td>ES 356</td>
<td>ECON 103, BIOL 180 or GEOG 178</td>
<td>ETS 5081</td>
</tr>
</tbody>
</table>

### Minors

<table>
<thead>
<tr>
<th>Code</th>
<th>Prescribed Methods Course</th>
<th>Additional Requirements</th>
<th>Praxis II or ACTFL Content Test Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biology 080-403</td>
<td>ES 360 (F)</td>
<td>BIOL 180 or GEOG 178</td>
<td>ETS 5435</td>
</tr>
<tr>
<td>Chemistry 100-406</td>
<td>ES 360 (F)</td>
<td>BIOL 180 or GEOG 178</td>
<td>ETS 5435</td>
</tr>
<tr>
<td>Coaching 971-403</td>
<td>KINS 492</td>
<td></td>
<td>no addtl exam</td>
</tr>
<tr>
<td>Economics 360-404</td>
<td>ES 356</td>
<td>BIOL 180 or GEOG 178</td>
<td>ETS 5081</td>
</tr>
<tr>
<td>English 540-408</td>
<td>ENGL 319, ENGL 419</td>
<td></td>
<td>ETS 5038</td>
</tr>
<tr>
<td>French 260-404</td>
<td>ES 366 (F) in language</td>
<td>Study abroad</td>
<td>WPT and OPI or OPIc</td>
</tr>
<tr>
<td>Geography 140-413</td>
<td>ES 356</td>
<td>ECON 103, BIOL 180 or GEOG 178</td>
<td>ETS 5081</td>
</tr>
<tr>
<td>Geology 160-402</td>
<td>ES 360 (F)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>German 280-404</td>
<td>ES 366 (F)</td>
<td>Study abroad in language</td>
<td>WPT and OPI or OPIc</td>
</tr>
<tr>
<td>History 380-404</td>
<td>ES 356 (SP)</td>
<td>ECON 103, BIOL 180 or GEOG 178</td>
<td>ETS 5081</td>
</tr>
<tr>
<td>Learning Disabilities 950-471</td>
<td></td>
<td>ETS 5146</td>
<td></td>
</tr>
<tr>
<td>Mathematics 180-407</td>
<td>ES 357</td>
<td>ETS 5161</td>
<td></td>
</tr>
<tr>
<td>Physics 230-403</td>
<td>ES 360 (F)</td>
<td>BIOL 180 or GEOG 178</td>
<td>ETS 5435</td>
</tr>
<tr>
<td>Political Science 420-403</td>
<td>ES 356</td>
<td>ECON 103, BIOL 180 or GEOG 178</td>
<td>ETS 5081</td>
</tr>
<tr>
<td>Sociology 480-404</td>
<td>ES 356</td>
<td>ECON 103, BIOL 180 or GEOG 178</td>
<td>ETS 5081</td>
</tr>
<tr>
<td>Spanish 320-405</td>
<td>ES 366 (F)</td>
<td>Study abroad in language</td>
<td>WPT and OPI or OPIc</td>
</tr>
</tbody>
</table>
Teaching 550-408  ES 405 (F)  1 yr college level foreign language

1 Broadfield Science add-on certification is available with these majors and requires ES 360 (fall only). Students should contact their advisor to discuss their intention to add the Broadfield Science certification.

Admission Requirements
Admission to Professional Education Programs

Major Requirements
Teaching (Code 230-205)

Thirty-six semester credits of Physics, including:
- PHYS 231 University Physics I 5
- PHYS 232 University Physics II 5
- PHYS 332 University Physics III 3
- PHYS 340 Optics 4
- PHYS 350 Electric and Electronic Circuits 4

At least 15 credits selected from:
- PHYS 226 Astronomy-Solar System
- PHYS 229 Astronomy-Stars and Galaxies
  or any physics course numbered above 325

Required courses not counted towards credit in major:
- CHEM 103 General Chemistry I
  & CHEM 104 and General Chemistry II

Required courses not counted towards credit in major:
- CHEM 105 General Chemistry I Lecture
  & CHEM 106 and General Chemistry I Laboratory
  & CHEM 109 and General Chemistry II with Lab
- MATH 114 Calculus I
- MATH 215 Calculus II
- MATH 216 Calculus III

This major is restricted to students in the College of Education and Human Sciences: Education Studies; Option B and leads to licensure to teach Physics in Early Adolescence through Adolescence classrooms. It is often combined with a mathematics or chemistry teaching minor.

Broadfield Science Licensure
Completion of the following requirements and ES 360 may be used in lieu of a minor and adds Broadfield Science licensure to the teaching major:

A. At least 14 credits from one of the following areas:

Area 1:
- BIOL 151 Biology of Humans
- BIOL 214 Human Anatomy and Physiology I
- BIOL 221 Foundations of Biology I
- BIOL 222 Foundations of Biology II
- BIOL 223 Foundations of Biological Inquiry
- BIOL 314 Human Anatomy and Physiology II

Area 2:
- CHEM 103 General Chemistry I
  & CHEM 104 and General Chemistry II
  OR
  - CHEM 105 General Chemistry I Lecture
    & CHEM 106 and General Chemistry I Laboratory
    & CHEM 109 and General Chemistry II with Lab
  OR
  - CHEM 115 Chemical Principles

Additional courses selected from the following:
- CHEM 213 Quantitative Analysis
- CHEM 218 Introduction to Inorganic Chemistry
- CHEM 325 Organic Chemistry I with Laboratory

Area 3:
Select one of the following:
- GEOL 106 Earth Science
- GEOL 110 Physical Geology
- GEOL 115 Environmental Geology
- GEOL 118 Societal Issues in Earth Science

Select one of the following:
- GEOG 104 The Physical Environment
- GEOG 340 Climatology
- GEOG 361 Environmental Hazards

Required:
- PHYS 226 Astronomy-Solar System

Additional courses from the following:
- GEOG 102 Oceanography
- GEOL 301 Earth Resources
- GEOL 303 Rocky Mountain Field Studies
- GEOL 308 Water Resources
- PHYS 229 Astronomy-Stars and Galaxies
- GEOG 200 Foundations of Geography
- GEOG 304 Introduction to Geomorphology
- GEOG 340 Climatology
- GEOG 361 Environmental Hazards

B. Eight credits in each of the two areas not selected in A above:

Area 1:
- BIOL 151 Biology of Humans
- BIOL 214 Human Anatomy and Physiology I
- BIOL 221 Foundations of Biology I

Area 2:
- CHEM 103 General Chemistry I
  OR
  - CHEM 105 General Chemistry I Lecture
    & CHEM 106 and General Chemistry I Laboratory
  OR
  - CHEM 115 Chemical Principles

CHEM 104 General Chemistry II
  OR
  - CHEM 109 General Chemistry II with Lab
  OR
  - CHEM 150 Survey of Biochemistry
Select one of the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOL 106</td>
<td>Earth Science</td>
</tr>
<tr>
<td>GEOL 110</td>
<td>Physical Geology</td>
</tr>
<tr>
<td>GEOL 115</td>
<td>Environmental Geology</td>
</tr>
<tr>
<td>GEOL 118</td>
<td>Societal Issues in Earth Science</td>
</tr>
<tr>
<td>GEOG 104</td>
<td>The Physical Environment</td>
</tr>
</tbody>
</table>

Required:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 226</td>
<td>Astronomy-Solar System</td>
</tr>
<tr>
<td>or PHYS 229</td>
<td>Astronomy-Stars and Galaxies</td>
</tr>
</tbody>
</table>

NOTE 1: A maximum of six credits of any combination of PHYS 399, PHYS 491, and PHYS 499 can be counted toward the major.

NOTE 2: Limit of 3 credits of PHYS 495 counted toward major.