Physics, Major - Teaching

Teaching (Code 230-205)

University Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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: 36

Grade Point Requirements

- Total: 2.00 average
- Resident: 2.00 average
- 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.

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.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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.

Skills Goal

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

Responsibility Goal

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

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: undefined
3. Residency requirements: undefined
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>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

K1 (Natural Sciences)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>K1</td>
<td>Natural Sciences</td>
<td>At least one Biology course</td>
</tr>
</tbody>
</table>
AND at least one of Chemistry, Physics, Geography, or Geology course (one science lab required)

**K2 (Social Sciences)**

PSYC 260 Educational Psychology 3

AND another learning experience

**K3 (Humanities)**

One literature course AND another learning experience

**K4 (Fine Arts)**

One fine arts course

**S1 (Written and Oral Communication)**

At least one writing course from the following:

- WRIT 114 Intensive Blugold Seminar in Critical Reading and Writing
- WRIT 116 Blugold Seminar in Critical Reading and Writing
- WRIT 118 Accelerated Blugold Seminar in Critical Reading and Writing
- WRIT 120 Blugold Seminar in Critical Reading and Writing for Transfer Students

AND at least one oral communication course from the following:

- CJ 201 Introduction to Interpersonal Communication
- CJ 202 Fundamentals of Speech
- CJ 203 Fundamentals of Human Communication

**S2 (Mathematics)**

LE approved math course

**S3 (Creativity)**

ES 497 Field Experience Seminar (included in major) 2

**R1 (Equity, Diversity, Inclusivity)**

ES 385 Social Foundations: Human Relations 3

AND another learning experience

**R2 (Global Perspectives)**

One LE approved course

**R3 (Civic and Environmental Issues)**

One LE approved course

**IL (Integration)**

ES 497 Field Experience Seminar (included in major) 2

AND another learning experience

NOTE: Course in Western History or Western Culture and course in Non-Western History or Non-Western Contemporary Culture is required.

### 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. The approved majors and minors lead to additional 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 adviser in education as well.

### Option B: EA-A

#### Early Adolescence through Adolescence Licensure

<table>
<thead>
<tr>
<th>Code</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
- or ES 446 Internship Teaching in Middle Level Education
- or ES 475 Internship Teaching in Secondary Education

- ES 490 Foundations of Education
- ES 497 Field Experience Seminar 2
- SPED 300 Inclusive Practices for Secondary Educators 2

NOTE: Although majors must be from the approved list below, the second plan may be from the approved list. Students pursuing EA-A licensure are not required to elect a second plan that leads to a teaching license.

### Approved Majors and Minors for Option B

<table>
<thead>
<tr>
<th>Code</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
- or ES 446 Internship Teaching in Middle Level Education
- or ES 475 Internship Teaching in Secondary Education

- ES 490 Foundations of Education
- ES 497 Field Experience Seminar 2
- SPED 300 Inclusive Practices for Secondary Educators 2

### Admission Requirements

#### Admission to Professional Education Programs

### Major Requirements

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

And at least one of Chemistry, Physics, Geography, or Geology course (one science lab required)

**K2 (Social Sciences)**

PSYC 260 Educational Psychology 3

AND another learning experience

**K3 (Humanities)**

One literature course AND another learning experience

**K4 (Fine Arts)**

One fine arts course

**S1 (Written and Oral Communication)**

At least one writing course from the following:

- WRIT 114 Intensive Blugold Seminar in Critical Reading and Writing
- WRIT 116 Blugold Seminar in Critical Reading and Writing
- WRIT 118 Accelerated Blugold Seminar in Critical Reading and Writing
- WRIT 120 Blugold Seminar in Critical Reading and Writing for Transfer Students

AND at least one oral communication course from the following:

- CJ 201 Introduction to Interpersonal Communication
- CJ 202 Fundamentals of Speech
- CJ 203 Fundamentals of Human Communication

**S2 (Mathematics)**

LE approved math course

**S3 (Creativity)**

ES 497 Field Experience Seminar (included in major) 2

**R1 (Equity, Diversity, Inclusivity)**

ES 385 Social Foundations: Human Relations 3

AND another learning experience

**R2 (Global Perspectives)**

One LE approved course

**R3 (Civic and Environmental Issues)**

One LE approved course

**IL (Integration)**

ES 497 Field Experience Seminar (included in major) 2

AND another learning experience

NOTE: Course in Western History or Western Culture and course in Non-Western History or Non-Western Contemporary Culture is required.
**PHYS 350** Electric and Electronic Circuits  4

At least 15 credits selected from:  15

- 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 General Chemistry II
- 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 367 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
  or CHEM 115 Chemical Principles
- CHEM 104 General Chemistry II
  or CHEM 150 Survey of Biochemistry

**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:
- GEOL 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 115 Chemical Principles
- CHEM 104 General Chemistry II
  or CHEM 150 Survey of Biochemistry

**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
  or PHYS 229 Astronomy-Stars and Galaxies

NOTE 1: A maximum of six credits of any combination of PHYS 392, PHYS 399, PHYS 491, and PHYS 499 can be counted toward the major.