

# SCIENCE TEACHING, PHYSICS EMPHASIS COMPREHENSIVE MAJOR

Teaching (Code 241-001)

## University Requirements

### GRADUATION REQUIREMENTS FOR BACCALAUREATE DEGREE

Credit Requirements	
Minimum total for graduation <sup>1</sup>	120
Upper division credits (courses numbered 300 and higher)	39
Liberal Education Core ( <a href="http://catalog.uwec.edu/undergraduate/graduation-requirements/#header1">http://catalog.uwec.edu/undergraduate/graduation-requirements/#header1</a> )	36
Academic Concentrations ( <a href="http://catalog.uwec.edu/undergraduate/graduation-requirements/#header16">http://catalog.uwec.edu/undergraduate/graduation-requirements/#header16</a> )	
Grade Point Requirements ( <a href="http://catalog.uwec.edu/undergraduate/graduation-requirements/#header14">http://catalog.uwec.edu/undergraduate/graduation-requirements/#header14</a> ) <sup>2</sup>	
Total	2.00 average
Resident	2.00 average
Major	2.00 average
Minor	2.00 average
Certificate	2.00 average
University Residency Requirements ( <a href="http://catalog.uwec.edu/undergraduate/graduation-requirements/#header15">http://catalog.uwec.edu/undergraduate/graduation-requirements/#header15</a> )	
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.

<sup>1</sup> Certain programs exceed this minimum.  
<sup>2</sup> 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](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		Credit Restrictions
Satisfactory/Unsatisfactory		
Total degree credit		maximum 12
Major, Standard		maximum 1 course
Major, Comprehensive		maximum 2 courses
Minor		maximum 1 course
Credit by Examination		
Total degree credit		maximum ¼ of total
Major or minor		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 five learning goals of our liberal education core and the 12 learning outcomes they comprise.

LIBERAL EDUCATION CORE REQUIREMENTS		a minimum of 36 credits
Knowledge Goal		
Knowledge Outcome 1 (K1): Natural Sciences ( <a href="http://catalog.uwec.edu/undergraduate/attribute-k1/">http://catalog.uwec.edu/undergraduate/attribute-k1/</a> )	Two (2)	learning experiences
One experience in laboratory science must be selected from either K1 or K2.		
Knowledge Outcome 2 (K2): Social Sciences ( <a href="http://catalog.uwec.edu/undergraduate/attribute-k2/">http://catalog.uwec.edu/undergraduate/attribute-k2/</a> )	Two (2)	learning experiences
One experience in laboratory science must be selected from either K1 or K2.		
Knowledge Outcome 3 (K3): Humanities ( <a href="http://catalog.uwec.edu/undergraduate/attribute-k3/">http://catalog.uwec.edu/undergraduate/attribute-k3/</a> )	Two (2)	learning experiences
Knowledge Outcome 4 (K4): Fine Arts ( <a href="http://catalog.uwec.edu/undergraduate/attribute-k4/">http://catalog.uwec.edu/undergraduate/attribute-k4/</a> )	One (1)	learning experience
Skills Goal		
Skills Outcome 1 (S1): Written and Oral Communication ( <a href="http://catalog.uwec.edu/undergraduate/attribute-S1/">http://catalog.uwec.edu/undergraduate/attribute-S1/</a> )	Two (2)	learning experiences
One S1 must meet the University Writing Requirement ( <a href="http://catalog.uwec.edu/undergraduate/graduation-requirements/#header10">http://catalog.uwec.edu/undergraduate/graduation-requirements/#header10</a> )		
Skills Outcome 2 (S2): Mathematics ( <a href="http://catalog.uwec.edu/undergraduate/attribute-S2/">http://catalog.uwec.edu/undergraduate/attribute-S2/</a> )	One (1)	learning experience
One S2 to meet the University Mathematics Requirement ( <a href="http://catalog.uwec.edu/undergraduate/graduation-requirements/#header11">http://catalog.uwec.edu/undergraduate/graduation-requirements/#header11</a> )		
Skills Outcome 3 (S3): Creativity ( <a href="http://catalog.uwec.edu/undergraduate/attribute-S3/">http://catalog.uwec.edu/undergraduate/attribute-S3/</a> )	One (1)	learning experience
Responsibility Goal		
Responsibility Outcome 1 (R1): Equity, Diversity, and Inclusivity ( <a href="http://catalog.uwec.edu/undergraduate/attribute-R1/">http://catalog.uwec.edu/undergraduate/attribute-R1/</a> )	Two (2)	learning experiences
One R1 must satisfy Design for Diversity ( <a href="http://catalog.uwec.edu/undergraduate/attribute-DDIV/#header13">http://catalog.uwec.edu/undergraduate/attribute-DDIV/#header13</a> )		
Responsibility Outcome 2 (R2): Global Perspectives ( <a href="http://catalog.uwec.edu/undergraduate/attribute-R2/">http://catalog.uwec.edu/undergraduate/attribute-R2/</a> )	One (1)	learning experience
Responsibility Outcome 3 (R3): Civic and Environmental Issues ( <a href="http://catalog.uwec.edu/undergraduate/attribute-R3/">http://catalog.uwec.edu/undergraduate/attribute-R3/</a> )	One (1)	learning experience
Integration Goal		

Integration Outcome 1 (I1): Integration (<http://catalog.uwec.edu/undergraduate/attribute-I1/>) Two (2) learning experiences

Service-Learning Goal	
Service-Learning ( <a href="http://catalog.uwec.edu/undergraduate/attribute-SL/#header13">http://catalog.uwec.edu/undergraduate/attribute-SL/#header13</a> )	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:

Abbreviation	Full Title
Resident	2.75 average
Total	2.75 average
Major	2.75 average
Minor (for certification only)	2.75 average

3. Residency requirements:

Abbreviation	Full Title
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.)

Teaching Licensure Requirements -  
Grades 4-12  
Program Options B and C

These program options are organized around content majors and education courses and are designed to prepare teachers for grades 4-12 teaching or for grades K-12 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 a K-12 licensure are not required to elect a second plan that leads to certification.

2. a professional sequence consisting of teaching methods and related courses.

3. ES 212, ES 313, and ES 314 with a minimum grade of C (not C-) in each course. Students must also earn a C or better in the prescribed methods courses for their major. See list of prescribed methods courses below.

Students are assigned an education academic advisor and a faculty advisor through the content major department.

Option B: Grades 4-12

Code	Title	Credits
Professional Sequence		
ES 212	Exploring Schooling K-12	2-3
ES 313	Curriculum, Instructional Methods, and Disciplinary Literacies in Grades K-12	3
ES 314	Collaboration, Engagement, and Assessment in Grades K-12	3
ES 385	Social Foundations: Human Relations	3
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	5-10
or ES 446 or ES 475	Internship Teaching in Middle Level Education Internship Teaching in Secondary Education	
ES 490	Historical, Legal, and Philosophical Foundations of Education	3
ES 497	Field Experience Seminar	2
SEIP 300	Inclusive Practices for Secondary Educators	3

Approved Majors and Minors for Option B (Students must earn a minimum grade of C or above in prescribed methods courses.

Comprehensive Majors	Code	Prescribed Methods Course	Additional Requirement	Praxis II Content Test Required
English & Language Arts	541-001	ENGL 319, ENGL 419		See department for ETS exam number
Mathematics	184-001	ES 357		See department for ETS exam number
Social Studies, History Emphasis	500-020	ES 356	ECON 103, BIOL 180 or GEOG 178	See department for ETS exam number
Science Teaching	241-XXX	ES 360	BIOL 180 or GEOG 178	See department for ETS exam number

Majors	Code	Prescribed Methods Course	Additional Requirements	Praxis II Content Test Required
Mathematics	184-201	ES 357		See department for ETS exam number

Minors	Code	Prescribed Methods Course	Additional Requirements	Praxis II or ACTFL Content Test Required
Coaching	971-403	KINS 492		no addt'l exam
Mathematics	180-407	ES 357		See department for ETS exam number

Admission Requirements

Admission to Education Programs

Admission to the Major

Formal application to the professional education program must be made by October 1 for spring admission or March 1 for fall admission. In order to submit an application to an Education Program, students must satisfy all of the requirements listed below:

1. Approval by the appropriate department in the College of Education and Human Sciences. See Department of Education for Equity and Justice (<http://catalog.uwec.edu/undergraduate/education-human-sciences/education-for-equity-justice/>) and Special Education and Inclusive Practices (<http://catalog.uwec.edu/undergraduate/education-human-sciences/special-education-inclusive-practices/>)sections of this catalog for criteria to be considered in making these recommendations.
2. Pre-education status.
3. Students must have attained at least Sophomore Status
4. **Minimum** total GPA of 2.5. Admission is competitive; thus the minimum GPA does not assure admission to a professional program in education.
5. Met the University Writing Requirement (complete WRIT 114, WRIT 116, WRIT 118, or WRIT 120 or the equivalent earning a C or better)
6. Met the University Mathematics requirements (complete one college-level math course earning C or better)
7. Good academic standing.
8. Complete an introductory education course with a field placement (eg. SEIP 208, ES 212 or the equivalent) with a grade of C or better.
9. Specific department criteria are found under the Department of Education for Equity and Justice (<http://catalog.uwec.edu/undergraduate/education-human-sciences/education-for-equity-justice/>) and Special Education and Inclusive Practices (<http://catalog.uwec.edu/undergraduate/education-human-sciences/special-education-inclusive-practices/>)Department Overview Pages.

Application Procedure

Students must formally apply to the professional program. **The number of students admitted to a program may be limited by resources available and not everyone who applies can be guaranteed admission.** See the appropriate section of this catalog for criteria upon which the departmental

recommendation will be based. Note that minimum criteria for a department may exceed the minimum criteria listed above.

Students who do not meet all the criteria listed above or who do not receive a favorable departmental recommendation may reapply during a later application period.

#### Special or Transfer Students

Special students and transfer students who desire to be admitted to a teacher education program should inform the Admissions Office upon application for admission to the University. They should indicate their area of interest and what teaching major they wish to pursue. These students are expected to have a minimum GPA of 2.5.

## Admission to the Teaching Professional Semester (Student Teaching)

### Admission to the Professional Education Semester

The “professional semester” is defined as the senior semester in which a student is enrolled in the field experience of student teaching or internship.

#### Filing Notice of Intent to Student Teach Applications

Students who plan to enter the professional semester during the fall semester of the next academic year must file a Notice of Intent to Student Teach with the Teacher Education Program office in the fall. Students who plan to enter the professional semester during the spring semester of the next academic year must file a Notice of Intent to Student Teach with the Teacher Education Program office in the spring. Information concerning the Notice of Intent to Student Teach will be advertised widely and posted across campus each semester with an associated due date.

Students are encouraged to submit their Notice of Intent to Student Teach by the announced due date. Considerable time is required to process each notice—that is, to determine eligibility, to make arrangements with schools for an appropriate field experience assignment, and to allow for introductions, orientations, and, in some cases, interviews. Students who file on time will benefit by the careful consideration that can be given to their requests; the later a notice is received, the fewer the placement assignments and choices still available will be. Failure to file a Notice of Intent to Student Teach on time may result in a delay of the professional semester.

#### Transfer and Special Students

No transfer or special student can enter the professional semester until after a full semester of residence and after earning a minimum of 15 credits at UW-Eau Claire. Senior transfer students enrolling in September must file an application for admission to the professional semester by December 1 for the following fall.

#### Criteria for Admission

No application for admission to the professional semester will be processed in the case of transfer and special students unless a full semester of residence and a minimum of 15 credits have been earned at UW-Eau Claire.

Factors to be considered in the application for admission to the professional semester are:

1. Criteria for admission to a professional program have been met.
2. Good academic standing, as defined in the catalog section on Academic Standing and Progress.
3. A minimum of 90 credits completed prior to the professional semester.

4. Approval of the major and minor department(s). Departments may have separate criteria they use to determine approval.
5. Resident and total GPAs of at least 2.75; GPAs of at least 2.75 in the major(s) and minor(s) intended for certification. All college-level courses attempted by the student are included when major, minor, and total GPAs are determined for admission to the professional semester and for graduation.
6. Completion of the 30 hour Human Relations Fieldwork requirement.
7. Evidence of freedom from tuberculosis. Tests are provided by Student Health Services or results of tests must be provided by the student when filing for the professional semester.
8. Approval by the appropriate departments in the College of Education and Human Sciences and the College of Arts and Sciences.
9. Completion of required criminal background check.

#### Deadline for Meeting Criteria

For placements in the fall semester, criteria for which the student is responsible (GPA, TB test, and criminal background check) must be met by March 1 of the preceding semester.

For placements in the spring semester, these criteria must be met by October 1 of the preceding semester.

For placements in the summer session, these criteria must be met by February 1 of the preceding semester.

Failure to meet criteria on time may result in a delay of the professional semester.

## Licensure to Teach

### Criteria for Recommendation for Licensure:

1. Completion of a baccalaureate degree.
2. Completion of an approved teacher education major, minor, or certificate.
3. A 2.75 or higher GPA in the major and minor (where certifiable) and in the combination of all course work in the major, minor (where certifiable), and professional education courses exclusive of student teaching. All college-level courses attempted by the student except student teaching are included when major, minor, and professional education GPAs are determined for recommendation for licensure.
4. Completion of student teaching courses with a mark of S.
5. Content area proficiency through one of the following:

Students will earn a minimum 3.0/4.0 GPA in content courses **OR** through obtaining a passing score on the appropriate Praxis II or ACTFL written portion (WPT) exam for Languages candidates. All Languages candidates must pass the OPI/OPIc within three years prior to the start of student teaching.

All Elementary-Middle and Special Education majors and minors, and Early Childhood majors must earn a passing score on the FORT.

## Wisconsin Application

College of Education and Human Sciences graduates who desire to teach in Wisconsin, will apply for licensure using the WI Department of Public Instruction's (DPI), ELO (Electronic Licensing Online) by following all steps listed on the site including fingerprinting if applicable.

Upon completion of all program requirements and University and WI Department of Public Instruction teaching requirements, information will be forwarded to WI DPI verifying this completion (including the completion of all required tests), a degree and any add-on certifications that have been awarded, and certifications the teaching candidates are eligible for with licensure. Candidates will then apply for their Initial License.

Out-of-state Applications

It is recommended that graduates seeking licensure to teach in states other than Wisconsin request application forms and instructions from the Department of Education of the state in which licensure is desired. Certification requirements vary by state. Inquiry early in the period of professional preparation is advisable. In most cases, an official transcript of credits must accompany the completed application form; additional tests or course work may be required. Therefore, it is imperative to check requirements of other states. Wisconsin and most other states require institutional endorsement. In general, candidates will be able to obtain licenses in other states; however, these licenses may be issued with stipulations. **It is the student’s responsibility to understand the licensing requirements of other states. UW-Eau Claire programs are designed to meet the requirements in Wisconsin only.**

Major Requirements

Teaching (Code 241-001)

The comprehensive major in Science Teaching, Physics Emphasis prepares education students to teach all science courses in a regular education setting grades 4 through 12.

Advisors: Erik Hendrickson

Code	Title	Credits
67-71 credits, including:		
Physics Emphasis Core		32
PHYS 231	University Physics I	5
PHYS 232	University Physics II	5
PHYS 315	The Mysterious Universe	3
PHYS 332	University Physics III	3
PHYS 340	Optics	4
PHYS 350	Electric and Electronic Circuits	4
MATH 114	Calculus I	4
MATH 215	Calculus II	4
Additional Requirements		9
ES 360	Teaching Science in Grades 4-12	3
ES 385	Social Foundations: Human Relations	3
and choose one: (3 credits)		
GEOG 178	Planet Earth: Conservation of the Environment	
BIOL 180	Environmental Biology and Conservation	
GEOL 204	Understanding Earth's Environment	
Chemistry Core		6-9
choose one option:		
Option 1		9
CHEM 105	General Chemistry I Lecture	
and		
CHEM 106	General Chemistry I Laboratory	
and		
CHEM 109	General Chemistry II with Lab	
or:		
Option 2		6
CHEM 115	Chemical Principles	
Earth & Space Science Core		11

PHYS 226	Astronomy-Solar System	4
and choose one: (4 credits)		
GEOL 110	Physical Geology	
GEOL 115	Environmental Geology	
GEOL 118	Societal Issues in Earth Science	
and choose one: (3 credits)		
GEOL 301	Earth Resources and Sustainability	
GEOL 304	Global Environmental Change	
GEOL 308	Water Resources	
Biology Core		9-10
choose one option:		
Option 1 - Take 3 of the following 4 courses:		9-10
BIOL 105	General Biology	
BIOL 106	Exploring the Living World	
BIOL 151	Biology of Humans	
BIOL 196	Human Nutrition	
or		
Option 2		9
BIOL 221	Foundations of Biology I	
and		
BIOL 222	Foundations of Biology II	
and		
BIOL 223	Foundations of Biological Inquiry	

Program Learning Outcomes

- Students completing this program will be expected to meet the following learning outcomes:
- Qualitatively describe natural phenomena and man-made devices in terms of the basic laws of physics in areas of classical mechanics, thermodynamics, electromagnetism, optics, electronic circuits, quantum physics, and special relativity.
  - Convert a physical situation described in English into a mathematical model.
  - Apply the mathematical tools commonly used in physics to obtain analytical and numerical solutions to problems modeling physical situations.
  - Synthesize appropriate concepts and methods from different courses in the solutions of problems and apply physical and mathematical principles across disciplinary boundaries.
  - Acquire sufficient content knowledge in physics, chemistry, biology, and Earth/space science by earning a minimum GPA in the major of 3.0 or by passing the appropriate Praxis II content exam.
  - Communicate verbally, graphically, and in writing the concepts of physics to adolescent learners.
  - Demonstrate an understanding of foundational biological principles in the areas of cell/molecular biology, genetics, evolution, ecology, diversity of life, and structure & function of organisms.
  - Demonstrate an understanding of Earth/space science processes.
  - Develop an understanding of chemical principles and be able to apply them to predict and rationalize chemical properties, including structure & bonding, reactivity & stability, and instrumentation theory.