Physics, Liberal Arts Emphasis, Major

University Requirements

Graduation Requirements for Baccalaureate Degree

Credit Requirements

Minimum total for graduation 1 120
Upper division credits (courses numbered 300 and higher) 39
Liberal Education Core 36

Academic Concentrations

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.

Certain programs exceed this minimum.
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

Junior College or Two-Year College Credits

Maximum 72 semester 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
Bachelor of Arts or Bachelor of Science Degree (B.A./B.S.)
University Graduation Requirements. All candidates for degrees must fulfill the requirements for credits, curriculum, GPA, and University residency as specified in the section of this catalog titled University Graduation Requirements.
College Graduation Requirements: Grade Point Averages. All candidates for degrees in the College of Arts and Sciences must earn minimum resident and total GPAs of 2.00 in the major, the minor, and the certificate. The resident and total GPAs for the major are computed using all attempted credits applicable to the major including those offered by departments other than the major department. The resident and total GPAs for the minor and the certificate are computed similarly.
Major-Minor and Major-Certificate Requirements. A standard major (a minimum of 36 credits) must be supplemented by a minor (a minimum of 24 credits) or by a certificate (12 to 18 credits) to meet graduation requirements for completing a first and second degree program. No minor or certificate is required with a Comprehensive Major (60 or more credits) or with two majors of 36 or more credits each.
Certain degree programs, which include Comprehensive Majors, may require more than the minimum of 120 credits for graduation.
Acceptable academic program combinations are determined at the college level. A major and a minor or a major and certificate or two majors (if available) may not be elected in the same department or program, except in the approved combinations listed here.
College Credits. Earn at least 90 credits in courses offered by the College of Arts and Sciences.
Bachelor of Arts Degree in the College of Arts and Sciences (B.A.)
Fulfillment of all University Graduation Requirements (which includes the Liberal Education Core); all College-level degree requirements (major and minor/certificate emphases, GPAs, earning at least 90 credits in Arts and Sciences course work); foreign language competency at the 102 level. Foreign language competency may be met in one of two ways: (1) Achieve a score on the foreign language placement test that qualifies the student to enter the 201-level course in a foreign language. (2) Earn a grade of at least C (not C-) or a mark of S in a 102-level foreign language course (or AIS 112 or AIS 122 / LANG 122 or CSD 103).
Bachelor of Science Degree in the College of Arts and Sciences (B.S.)
Fulfillment of all University Graduation Requirements (which includes the Liberal Education Core); all College-level degree requirements (major and minor/certificate emphases, GPAs, earning at least 90 credits in Arts and Sciences course work); mathematics competency at the MATH 111, MATH 112 or MATH 113 level. Mathematics competency can be met in one of three ways: (1) Achieve a score on the mathematics placement test that qualifies the student to enter MATH 114. (2) Earn a grade of at least C (not C-) or a mark of S in MATH 111, MATH 112, or MATH 113. (3) Achieve a satisfactory score on the MATH 112 competency test. This test may be attempted no more than two times.
Major Requirements
Liberal Arts (Code 230-201)
The Liberal Arts emphasis is the traditional physics major, providing preparation for graduate school as well as a broad range of careers in business and industry following completion of the baccalaureate degree.
The Liberal Arts Emphasis requires 36 credits of physics coursework including:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 186</td>
<td>Introductory Seminar</td>
<td>0.5</td>
</tr>
<tr>
<td>PHYS 231</td>
<td>University Physics I</td>
<td>5</td>
</tr>
<tr>
<td>PHYS 232</td>
<td>University Physics II</td>
<td>5</td>
</tr>
</tbody>
</table>
PHYS 332  University Physics III  3
PHYS 333  Quantum Physics  3
PHYS 350  Electric and Electronic Circuits  4
PHYS 340  Optics  4
or PHYS 360  Electronics
PHYS 365  Theoretical Mechanics  4
PHYS 486  Senior Seminar  0.5

The remaining Physics credits are to be selected from any physics course above 325 (including PHYS 374/MSE 374) and MSE 315, MSE 357, MSE 372, and MSE 451.

Required courses not counted toward credits in major:

MATH 312  Differential Equations and Linear Algebra
CS 163  Introduction to Programming in C++ 1
or CS 170  Computing for the Sciences and Mathematics

1 It is strongly recommended that CS 163 or CS 170 be completed within the first three semesters.

Chemistry (CHEM 115 or CHEM 103 and CHEM 104 or CHEM 105, CHEM 106, and CHEM 109) is strongly recommended.

NOTE 1: An approved research project must be completed prior to PHYS 486 (see PHYS 486 course description for details).

NOTE 2: A maximum of six credits of any combination of PHYS 399, PHYS 491, and PHYS 499 can be counted toward the major.

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