PHYSICS, APPLIED PHYSICS EMPHASIS, MAJOR

Liberal Arts (Code 230-203)

University Requirements

GRADUATION REQUIREMENTS FOR BACcalaureate DEGREE

Credit Requirements

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

Academic Concentrations

Grade Point Requirements

Total  
Resident  
Major  
Minor  
Certificate

University Residency Requirements

Minimum total  
Senior year  
Major, Standard, upper division in residence  
Major, Comprehensive, upper division in residence

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 to check for the most current restrictions.

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

Major, Standard

Major, Comprehensive

Credit by Examination

Total degree credit

Major, Comprehensive

Two-Year College Credits

Total degree credit

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

Total KINS 100-184

Total Band, chorus, drama

Single course band, chorus, drama

Extension credits

UW-System

Other extension/ correspondence

USAFI

Credit Restrictions

maximum 12

maximum ½ of total

maximum ½ of total

maximum 4 credits

maximum 1 credit

maximum 12 credits

maximum ¼ of total

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

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

Knowledge Outcome 2 (K2): Social Sciences
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
One S1 must meet the University Writing Requirement

Skills Outcome 2 (S2): Mathematics
One (1) learning experience

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

Responsibility Goal
Responsibility Outcome 1 (R1): Equity, Diversity, and Inclusivity
Two (2) learning experiences

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 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 the 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 230-203)
This emphasis focuses on physics applications of relevance to industrial and engineering employment environments following completion of the baccalaureate degree.

The Applied Physics Emphasis requires 36 credits of physics coursework including:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>MSE 120</td>
<td>Introduction to Engineering</td>
<td>0.5-2</td>
</tr>
<tr>
<td>or PHYS 186</td>
<td>Introductory Seminar</td>
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</tr>
<tr>
<td>Course Code</td>
<td>Course Title</td>
<td>Credits</td>
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</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>
<tr>
<td>PHYS 332</td>
<td>University Physics III</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 340</td>
<td>Optics</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 350</td>
<td>Electric and Electronic Circuits</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 360</td>
<td>Electronics</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 255 &amp; PHYS 356</td>
<td>Statics and Dynamics</td>
<td></td>
</tr>
<tr>
<td>PHYS 365</td>
<td>Theoretical Mechanics</td>
<td></td>
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<tr>
<td>PHYS 375</td>
<td>Electromagnetic Fields</td>
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<tr>
<td>PHYS 430</td>
<td>Advanced Laboratory Techniques</td>
<td>2</td>
</tr>
<tr>
<td>PHYS 486</td>
<td>Senior Seminar</td>
<td>0.5</td>
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Select one of the following:

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<tr>
<td>PHYS 255</td>
<td>Statics and Dynamics</td>
</tr>
<tr>
<td>PHYS 365</td>
<td>Theoretical Mechanics</td>
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<tr>
<td>PHYS 375</td>
<td>Electromagnetic Fields</td>
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<td>PHYS 430</td>
<td>Advanced Laboratory Techniques</td>
</tr>
<tr>
<td>PHYS 486</td>
<td>Senior Seminar</td>
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</tbody>
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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:

<table>
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<tbody>
<tr>
<td>MATH 312</td>
<td>Differential Equations and Linear Algebra</td>
</tr>
<tr>
<td>MATH 345</td>
<td>Introduction to Probability and Mathematical Statistics</td>
</tr>
<tr>
<td>CS 163</td>
<td>Introduction to Programming in C++</td>
</tr>
<tr>
<td>or CS 170</td>
<td>Computing for the Sciences and Mathematics</td>
</tr>
</tbody>
</table>

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<table>
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<tbody>
<tr>
<td>CHEM 115</td>
<td>Chemical Principles</td>
</tr>
<tr>
<td>CHEM 103 &amp; CHEM 104</td>
<td>General Chemistry I and General Chemistry II</td>
</tr>
<tr>
<td>CHEM 105 &amp; CHEM 106 &amp; CHEM 109</td>
<td>General Chemistry I Lecture and General Chemistry I Laboratory and General Chemistry II with Lab</td>
</tr>
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1 It is strongly recommended that CS 163 or CS 170 be completed within the first three semesters.

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.