PHYSICS, LIBERAL ARTS EMPHASIS, MAJOR

Liberal Arts (Code 230-201)

University Requirements

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<th>Code</th>
<th>Title</th>
<th>Credits</th>
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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

Grade Point Requirements 2

Total 2.00 average
Resident 2.00 average
Major 2.00 average
Minor 2.00 average
Certificate 2.00 average

University Residency Requirements 3

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.
3 See special requirements for the College of Education and Human Sciences.

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.

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LIBERAL EDUCATION CORE REQUIREMENTS

Knowledge Goal

Knowledge Outcome 1 (K1): Natural Sciences Two (2) learning experiences

Knowledge Outcome 2 (K2): Social Sciences Two (2) learning experiences

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

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 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/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**

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:

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<tr>
<th>Course</th>
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<th>Credits</th>
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<tbody>
<tr>
<td>PHYS 186</td>
<td>Introductory Seminar</td>
<td>0.5</td>
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<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 333</td>
<td>Quantum Physics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 350</td>
<td>Electric and Electronic Circuits</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 340</td>
<td>Optics</td>
<td>4</td>
</tr>
<tr>
<td>or PHYS 360</td>
<td>Electronics</td>
<td></td>
</tr>
<tr>
<td>PHYS 365</td>
<td>Theoretical Mechanics</td>
<td>4</td>
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<tr>
<td>PHYS 486</td>
<td>Senior Seminar</td>
<td>0.5</td>
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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:**

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<tr>
<td>MATH 312</td>
<td>Differential Equations and Linear Algebra</td>
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<tr>
<td>CS 163 or CS 170</td>
<td>Introduction to Programming in C++</td>
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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 392, PHYS 399, PHYS 491, and PHYS 499 can be counted toward the major.