About the major:
Six standard major options in the department are available: a liberal arts emphasis for students intending further study in physics or a related field after graduation, an applied physics emphasis for students intending a career in industry immediately upon graduation, a physics teaching or a physical science teaching or a physics/math teaching certification for Early Adolescence Through Adolescence in the College of Education & Human Sciences, and a dual degree program for students intending to get both a physics degree from the University of Wisconsin - Eau Claire and an engineering degree from either the University of Wisconsin - Madison or the University of Minnesota - Twin Cities. The dual degree program requires early and skillful advising. Students are strongly encouraged to get involved in a research project as soon as possible, since giving a departmental research presentation is required for graduation. We have many areas of undergraduate research available in the department: materials science, astronomy, computational physics, atomic physics, planetary science, and more.

Majors:
- Physics – liberal arts emphasis
- Physics – applied emphasis
- Physics – teaching
- Physics – dual degree program
- Physical Science – teaching
- Physics/Math - teaching

Minors/Certificates:
- Physics – liberal arts emphasis
- Physics – teaching
- Computational Science
- LabVIEW – certificate

Required GE or University courses:
**Category IA:** CJ 201, 202 or 205 is required for education; recommended for others.

**Category IB:** Math 114 (Calculus I), 215 (Calculus II), and CS 163 (Programming in C++) or CS 170 (Computing for the Sciences and Math) are required by the physics major.

**Category II:** Phys 231 and 232 are required and satisfy the laboratory course requirement. Chem 103 or Chem 115 is recommended. Phys 308 and 315 can be considered to satisfy the 300-level GE requirement.

**Category III:** No recommendations - see Catalog requirements for education.

**Category IV:** No recommendations - see Catalog requirements for education.

Essential Courses:
Liberal Arts physics majors, including dual degree, need to take Phys 186. Students considering the dual degree program should contact a dual degree advisor as soon as possible. If possible, the dual degree advisor should participate in the course selection for the first semester. The dual degree program requires very skillful consideration of course selections in order to ensure that students will be able to transfer into their engineering program of choice at the most appropriate time.

Information for exploring students:
Phys 186 allows students to become integrated into the department and explore the major. Phys 226 or 229 counts toward the GE II lab science requirement and also gives a reasonable suggestion of the analytical thinking needed for the physics major. Some students who are working on their lower-level math courses could take Phys 211 as an introduction, since the same topics are covered in Phys 231, just without the calculus-level problem-solving (although this course would not count toward the physics major). Students interested in discussing these possibilities with an academic advisor should contact the department chair. Students who take an introductory materials course might also look into a physics major or minor.

The Society of Physics Students hosts potluck lunches, faculty/student softball and/or volleyball games, picnics, contraption contests, etc. Any interested students can join in these activities.
Program Readiness:

Math readiness
Students normally begin in the math course indicated by the math placement score. This is usually Math 112 (Precalculus Mathematics), Math 113 (Trigonometry) or Math 114. Students need to be enrolled in Math 114 to start Phys 231. Students who qualify for Math 114 may not be ready for Phys 231. A strong math placement is helpful to ensure timely progression through the math and physics course sequences.

Academic maturity
To start with calculus and physics in the first semester requires academic indications such as strong high school grades in a demanding program or high ACT scores, in addition to math placement in Math 114.

Motivation
Interest in the subject and maturity for disciplined study (40-50 hours/week) are important.

Contact information:
Dr. Lyle Ford
www.uwec.edu/physics/
Phillips Science Hall 236
(715) 836-5046

Helpful Tips:
Physics is a sequential major. All courses have pre- or co-requisites and many courses in the major are offered only once per year. The required mathematics courses are sequential, as well.

See the program readiness section. Math 114 and Phys 231 should only be taken concurrently during the first semester by well-qualified students. If Chem 115 is to be scheduled during the first semester, as well, consultation with an advisor from the Physics & Astronomy Department is very important.

For detailed requirements of the three different liberal arts degrees, the three different teaching degrees, and the three different degree minors, please see the "Our Programs:" links on our departmental web site (listed below). These web pages also provide several different sample schedules and a detailed listing of the similarities and differences between the degrees.

UW-Eau Claire respects individual differences. This guide complements rather than substitutes for individual advising.

For instructions about how to declare this major: www.uwec.edu/registrar/chgofmajor/procedures/