

Guidelines for Barrett Honors College Students Majoring in Physics

The Department of Physics offers several undergraduate degrees and emphases. Here is a list of all of the undergraduate degrees, as taken from the Department website

<https://physics.asu.edu/degrees/undergrad>

1) BS in Physics, option 1. This traditional “professional” physics program is selected by a majority of our majors, and especially those who plan graduate work in physics. This option has the greatest concentration in physics of all of our program options.

2) BS in Biophysics. Biophysics is concerned with biological phenomena using the tools and methodologies of physics. The BS degree in biophysics is interdisciplinary program, providing students with a working understanding of the important principles of physics, chemistry and biology that govern the molecular processes of life.

3) Secondary Education BS in Physics. Physics is the cornerstone of STEM (science, technology, engineering, and mathematics) disciplines. At ASU and nationally, the production of new physics teachers is far below the need. The shortage of highly qualified physics teachers in every state is an ongoing problem. This degree concentration is designed to produce more and better-qualified physics teachers.

4) BA in Physics. The Bachelor of Arts in Physics is selected by students seeking dual degrees. This option works well for students who also plan on teaching at the high school level.

5) Physics Minor. Our 24 credit hour minor program adds dimension to any major degree program. A physics minor also overlaps with university general studies SQ requirements, thus complimenting many other liberal arts and technical programs.

Honor’s only courses: The Department of Physics has only one sequence of courses designated for BHC students, PHY 121H/131H; but these courses are usually not recommended for physics majors. The PHY121H/131H sequence is for BHC students with a wide spectrum of interests, including chemistry, life sciences, and engineering. Most physics majors should take the PHY150/151 sequence instead. Because the PHY150/151 sequence is for physics majors only, the chosen topics and the depth of coverage are tailored towards those who plan careers in physics. The relatively small number of BHC physics majors each year does not allow us to offer separate honors sections for the PHY150/151 sequence. Nevertheless, BHC students can receive honors credit in PHY150 and/or PHY151 via the Honor’s Enrichment Contract.

Honor’s Enrichment Contracts: Most faculty members in the Department of Physics are enthusiastic about directing Honor’s Enrichment Contracts for the BHC students in their classes. These contracts will often involve additional projects, which are to be completed during the semester with the guidance of the faculty member. Most faculty also welcome input from the students on how they could further explore the ideas presented in the class. Any interested student should contact the professor as soon as possible at the start of the semester. Additional information can be found by following this link:

<http://barretthonors.asu.edu/academics/honors-courses-and-contracts/honors-enrichment-contracts/>

Honors credit for key physics classes: Two of the core courses in the physics-majors’ curriculum have been designated to receive honors credit. BHC students who successfully complete PHY 201 (Mathematical Methods in Physics I) and PHY 333 (Electronic Circuits and Measurements I) will receive honors credit for these classes. Specifically, 3 hours of lower-division honors credit are given for PHY 201 and 3 hours of upper-division honors credit are given for PHY 333. These courses are required in the standard sequence of classes taken by most physics majors.

The Department of Physics does not offer a separate course for BHC thesis preparation. Therefore, honors physics majors should participate in a preparation course offered by the BHC before registering for HON 492 or 493. Additional information can be found at <http://barretthonors.asu.edu/academics/thesis-and-creative-project/>

The Department of Physics has adopted the minimum requirements of the BHC for the honors project thesis committee. Specifically: "The minimum number of committee members will be two, a director and second committee member, and only the director MUST be an ASU faculty member (lecturer or tenure-line)." Students should consult their thesis director or the Faculty Honors Advisor for Physics for recommendations regarding this committee.

The Department of Physics offers a Senior Project Award for Barrett Honors College students who receive a Bachelor's degree in physics, and who complete their senior project in physics or a related field. Information regarding the Award is usually emailed to eligible students during spring semester of their senior year. Additional information can be obtained from the Faculty Honors Advisor for Physics.