FAQ for first-year students considering a major in Physics
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1. What classes should I take in my first year at DU?
2. What if I have AP Physics or AP Calculus credit?
3. What if I have trouble enrolling in a Physics course?
4. Should I get a BA or a BS in Physics?
5. Can I specialize within Physics?
6. Can I major in astronomy?
7. Can I minor in Physics?
8. Can I double major in Physics and something else?
9. Can I combine physics and engineering?
10. Can I combine physics and business?
11. Can I study abroad as a Physics major?
12. Can I do research as an undergraduate?
13. Is there a physics and astronomy club?
14. What kinds of careers can I pursue with a Physics major?

For help with all Physics & Astronomy advising questions, please email Dr. Jennifer Hoffman, jennifer.hoffman@du.edu.
1. What should I take in my first year at DU?

Welcome! If you’re thinking about majoring in Physics, we strongly encourage you to enroll in Physics Preparatory (PHYS 1200) in the fall quarter of your first year. This 2-credit class will introduce you to our program and to other physics students, as well as give you some introductory math and physics review. It’s not required, but is a great way to learn about being a Physics major! Students who have not declared the Physics major are welcome; for help enrolling, please contact the course instructor or email us at the address on the bottom of the page.

Our three-quarter introductory physics sequence for science majors, University Physics (PHYS 1211/1212/1213), begins in winter quarter each year. It is required for Physics majors and is a prerequisite for all the more advanced physics courses.

You will also need a year of calculus (MATH 1951/1952/1953) concurrently with University Physics. If you’re not ready to jump into calculus in your first quarter, you can start with College Algebra and Trigonometry (MATH 1070) in fall and then begin the calculus sequence in winter.

Finally, as a Physics major you’ll need one quarter of introductory chemistry or biology plus lab (CHEM 1010/1240, BIOL 1010/1020, or BIOL 1011/1021). It doesn’t matter when you take this, but it’s easiest for most people to do it in their first fall quarter.

2. What if I have AP Physics or AP Calculus credit?

If you got a 4 or 5 on the AP Physics C Mechanics exam, DU allows you to substitute this score for University Physics I (PHYS 1211, offered yearly in the winter). If you got a 4 or 5 on the AP Physics C E&M exam, DU allows you to substitute this score for University Physics III (PHYS 1213, offered yearly in the fall). AP credit does not substitute for University Physics II (PHYS 1212, offered yearly in the spring). All Physics majors must take this course.

Even if you have AP credit, we recommend thinking carefully about whether to skip parts of University Physics. This is an important sequence for solidifying your physics knowledge before moving on to more advanced coursework; it’s also a time when you’ll form friendships and study groups and build relationships with professors that will last your entire college career. University Physics III in particular plays a key role in transitioning Physics majors to the second-year courses. If you decide to take either of these courses instead of using your AP credit, email the instructor or contact us at the email address below for help enrolling.

Scores of 4 or 5 on the AP Calculus AB or BC exam allow you to opt out of some or all quarters of the introductory calculus sequence; see this chart for more information. Be aware that you must complete this sequence or its equivalent before moving to the second-year physics courses.

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If you have both AP Physics and AP Calculus credit, feel very confident about your preparation in both areas, and wish to move immediately to more advanced coursework, it is best to contact us for individual advising via the email address at the bottom of the page. We still recommend Physics Preparatory (PHYS 1200) in your first fall, but you may be able to begin Modern Physics (PHYS 2251) in the winter. Don’t forget that you will still need to take University Physics II (PHYS 1212) in the spring of your first year. We do not allow substitutions for this course.

More detailed information about how DU applies credit from AP and other exams can be found online [here](https://example.com).

3. What if I have trouble enrolling in a Physics course?

Sometimes people have difficulties due to their declared majors, closed course sections, errors in prerequisites, need for instructor permission, etc. Most of these issues are easily resolved; just contact the course instructor or email us at the address on the bottom of the page and we’ll be happy to help.

4. Should I get a BA or a BS in Physics?

We recommend that physics students declare the BS to begin with and then modify this later if necessary. The BS is our most popular degree; it requires more coursework than the BA and allows you to write a senior thesis or pursue a concentration. The BS is also the best choice if you are double majoring in another scientific field. It requires two minors (but you get the minor in mathematics automatically).

The BA in Physics may be the best choice for someone also pursuing a BA in another field such as humanities or social science. It requires only one minor.

It is possible to change from BS to BA or vice versa at any time. Contact us and we’ll help you make the switch.

5. Can I specialize within Physics?

Yes! We have three concentrations available to BS students: biophysics, nanophysics, and computational physics. You are not required to choose a concentration, but if you do, you will take more courses beyond those required for the major, including some in other departments, and write a senior paper or senior thesis in the concentration area. Your concentration will be listed on your diploma.

We also have an Astrophysics minor; see next question.

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6. **Can I major in astronomy?**

   We do not offer a major in astronomy, but we do have a popular Astrophysics minor. Because the astronomy courses all have General Physics (PHYS 1111/1112/1113) or University Physics (PHYS 1211/1212/1213) as prerequisites, it is easiest to minor in Astrophysics if you are also majoring in Physics. It is also possible to do research with one of our astronomy professors (even if you’re not a Physics major or Astrophysics minor) and write a senior thesis in astronomy. For more information, contact us or visit our website.

   Majoring in Physics and minoring in Astrophysics is excellent preparation for graduate school in astronomy.

7. **Can I minor in physics?**

   We offer three physics-related minors: Physics, Medical Physics, and Astrophysics. All require a full year of either General Physics (PHYS 1111/1112/1113) or University Physics (PHYS 1211/1212/1213). The Physics minor requires 6 credits of additional physics coursework of your choice. The Medical Physics minor requires Physics of the Body (PHYS 2300) and Medical Imaging Physics (PHYS 2300) in addition to the introductory sequence. Physics majors may not minor in Physics or Medical Physics.

   The Astrophysics minor requires 20 credits of astronomy-related coursework beyond the introductory sequence. Physics majors may minor in Astrophysics. For more information, contact us or visit our website.

8. **Can I double major in physics and something else?**

   Yes! The BS in Physics combines well with many other BS degrees, including mathematics, chemistry, biology, etc. The BA in Physics allows even more flexibility and combines well with BA degrees in humanities or social science. You can also obtain either a BS or BA in physics and a secondary major in any of the areas listed here.

9. **Can I combine physics and engineering?**

   Yes! There are several ways to do this:
   
   - Physics major + Engineering minor;
   - Engineering major + Physics (or medical physics) minor;
   - Dual degree: BS in Physics + MS in Engineering in 5 years.

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The curricula for Physics and Engineering majors are nearly identical in the first year, so you don’t have to choose right away. The first time they diverge is in the fall quarter of the second year, when Engineering majors take PHYS 1214 while Physics majors take PHYS 1213 plus lab.

In the dual-degree program, you will major in Physics but take Engineering electives and apply for the Engineering MS program in your junior year. Be sure to let us know if you are interested in this program so we can make sure you get the right advising.

10. Can I combine physics and business?
   Yes! We recommend a minor in Business along with a Physics major. It’s also possible to take business courses without obtaining a physics degree. This combination is excellent preparation for a career in finance.

11. Can I study abroad as a Physics major?
   Yes! Most of our majors study abroad. The easiest way to do this is to go abroad in the fall quarter of your third (junior) year. Only one required physics course is offered in this quarter, and we offer it in winter as well. With this option, you don’t have to take any physics courses abroad.

   Some of our majors choose to study abroad for a whole year. This works best if you take some physics while away. We only allow transfer of credit toward a Physics degree if instruction at the host institution is in English. Talk to your Physics adviser or email us at the address at the bottom of the page to make sure you have a plan to get all the degree requirements.

12. Can I do research as an undergraduate?
   Yes! We strongly encourage our majors to get involved in research. It’s as easy as talking to a professor who works in the area you’re interested in. You may decide to write a senior thesis describing the research you’ve done as a Physics major; this allows you to earn distinction in the major and makes you more attractive to employers and graduate schools.

13. Is there a physics and astronomy club?
   Yes! DU hosts a chapter of the national Society of Physics Students (SPS) that meets every other week. They do lots of exciting activities like touring national labs, going to events such as plays and lectures, and providing high-quality science outreach to the Denver public. The highlight of each year is our trip to the Elitch Gardens amusement park, where we wow the crowds with demonstrations of the physics going on all around them. The group is very friendly and is open to all students, not just Physics majors, so come and bring your friends!

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14. What kinds of careers can I pursue with a Physics major?

Almost anything you want! Many of our majors go on to do scientific work in industry, academia, or national labs. But physics also prepares you for a wide variety of careers including engineering, computer science, finance, law, education, journalism, public policy, etc. Physics gives you a great background in quantitative literacy, the ability to reason clearly and logically, and lots of experience solving complex problems both on your own and in a team. These skills have broad applicability across the career spectrum. How will you put them to work?

For more information, see the APS physics careers page or the SPS Career Pathways Project.