What UR Physics Course Should I Start With?
(updated 11/2022)

The first physics course that most students take at the University of Richmond is Physics 131. This is true for first-year students who are considering a physics major, and also for biology and chemistry majors and students who need a year of physics for medical school. If you are considering a physics major, we recommend that you take PHYS 131 in the fall of your first year.

Skipping PHYS 131 and Advanced Placement:
It is possible to receive UR credit for Physics 131 or Physics 132 through AP or IB tests, and there are very specific rules for that. College physics courses taken during high school can also be transferred for UR credit.

But the question of "What UR Physics course should I start with?" is almost completely separate from what AP or IB or transfer credit you have. As a general rule:

> **For choosing your first physics course, we don't care whether you've taken some over-priced standardized test; we only care *what you know*. We're happy to let you skip any 100-level physics course if you already know the material.**

Presumably, we all want the same thing, which is for you to take a course that is challenging and interesting to you. Having you bored out of your mind in a class that you've already taken in high school doesn't help anybody.

So, for instance, if you already have a good understanding of mechanics and think you could skip PHYS 131, all you need to do is talk to the Chair of the Physics Department, who will give you a "prerequisite override" into PHYS 132 if that's appropriate. Talking with the Physics Chair is especially useful if you're coming from outside the U.S., since it's not always obvious how your high school physics curriculum aligns with ours. Regardless of where you're from, there are plenty of excellent high school classes that aren't technically labeled as "AP" or "IB" courses.

Here's a rough guide to some common situations for students with AP credit:

- **If you took "AP Physics 1" in high school**, you should probably start with PHYS 131. "AP Physics 1" covers the same material as PHYS 131, but without using calculus, which is a big deal. Even though the Physics 1 AP test is technically equivalent to PHYS 127, and 127 is technically an allowable prerequisite for 132, taking PHYS 131 is probably a good idea—especially if it's been a few years since you took physics, or if you suspect your high school class wasn't the best. (On the other hand, if you're fresh out of crushing a "Physics 1" high school class that you took while you were also crushing calculus, talk to us!)
- **If you took "AP Physics C: Mechanics" in high school**, you should definitely skip 131 and go straight into 132, no questions asked. You'll be bored out of your gourd if you take 131.
- **If you took "AP Physics C: Electricity and Magnetism" in high school**, then technically you can skip both 131 and 132 and go straight into 200-level physics courses. But this is a little trickier, because we suspect that our PHYS 132 is taught at a slightly higher level than most high school AP courses. We've had several students who got a "4" or "5" on the AP test who decided to take 132 anyway and reported afterwards that 132 was definitely worthwhile for them. But this clearly depends on your specific situation. We encourage you to talk to the Physics Chair for guidance.

What About Calculus?
Physics 131 and 132 are based on calculus; Calc 1 is required for PHYS 131, and Calc 2 is required for PHYS 132. (Both are "co-requisites," meaning you can take them either before or at the same time.) That's a for-real requirement, as calculus is critical to understanding how physics works. That said, understanding the *ideas* of calculus is much more important than remembering all of the details. We

expect that students in 131 should be able to take derivatives and integrals of simple functions like $y = 3x^2$ or $y = \sin 5x$, and should understand how these relate to slope and area under a curve. But don't worry if you can't remember the derivatives of inverse trigonometric functions, or all of those tricky integration methods; you'll be fine without them.

As with physics prerequisites, we care much more about what calculus you *know* than which specific math courses you technically have credit for. If you are comfortable with derivatives and integrals but don't happen to have an AP credit to show for it, talk to us. We'll be happy to give you a "prerequisite override" to let you into Physics 131 or 132 if that's the right thing to do.