

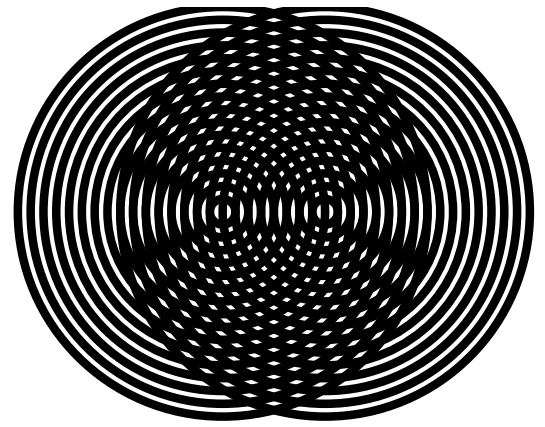
# Rider Institute Online

## Physics

Spring 2024 beginning January 10th

Dr. Todd H. Rider, [thor@riderinstitute.org](mailto:thor@riderinstitute.org)

Website: [riderinstitute.org](http://riderinstitute.org)



This online course (for students in upper elementary through high school) covers physics from the basics to quantum mechanics and beyond. No prior knowledge is required. Supplementary readings and simple home experiments are recommended (but not required) each week.

The course is conducted via Zoom. Each week's material is covered in two halves, on Wednesdays and Thursdays 8:00-8:30 p.m. Eastern (5:00-5:30 p.m. Pacific).

You can pay for individual blocks of 5-6 weeks (see below) or \$352 for the entire spring course. To register, please pay in advance by credit card ([riderinstitute.org/donate](http://riderinstitute.org/donate)) or by check made payable to "Rider Institute Inc." and mailed to:

Todd Rider, 5 Green Needles Road, Littleton, MA 01460

and also send an email ([thor@riderinstitute.org](mailto:thor@riderinstitute.org)). Payments are nonrefundable.

### Physics Part IV (\$110 for 5 weeks)

Jan. 10 + 11	Electric and magnetic fields
Jan. 17 + 18	Electric circuits
Jan. 24 + 25	Electromagnetic fields/waves
Jan. 31 + Feb. 1	EM spectrum and polarization
Feb. 7 + 8	Refraction and diffraction

### Physics Part V (\$132 for 6 weeks)

Feb. 14 + 15	Special relativity
Feb. 21 + 22	General relativity
Feb. 28 + 29	Big Bang and cosmology
Mar. 6 + 7	Warp drives and time machines
Mar. 13 + 14	Nonrelativistic quantum physics 1
Mar. 20 + 21	Nonrelativistic quantum physics 2

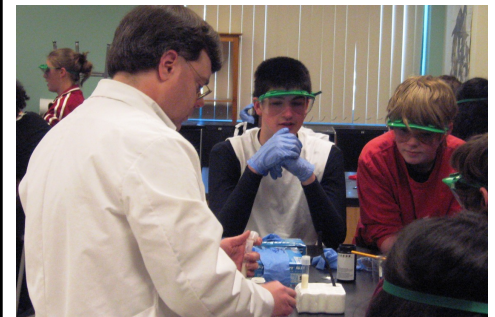
### Physics Part VI (\$110 for 5 weeks)

Mar. 27 + 28	Solid state physics
Apr. 3 + 4	Relativistic quantum physics
Apr. 10 + 11	Nucleus and radioactive decay
Apr. 17 + 18	Nuclear fission
Apr. 24 + 25	Nuclear fusion and plasma physics

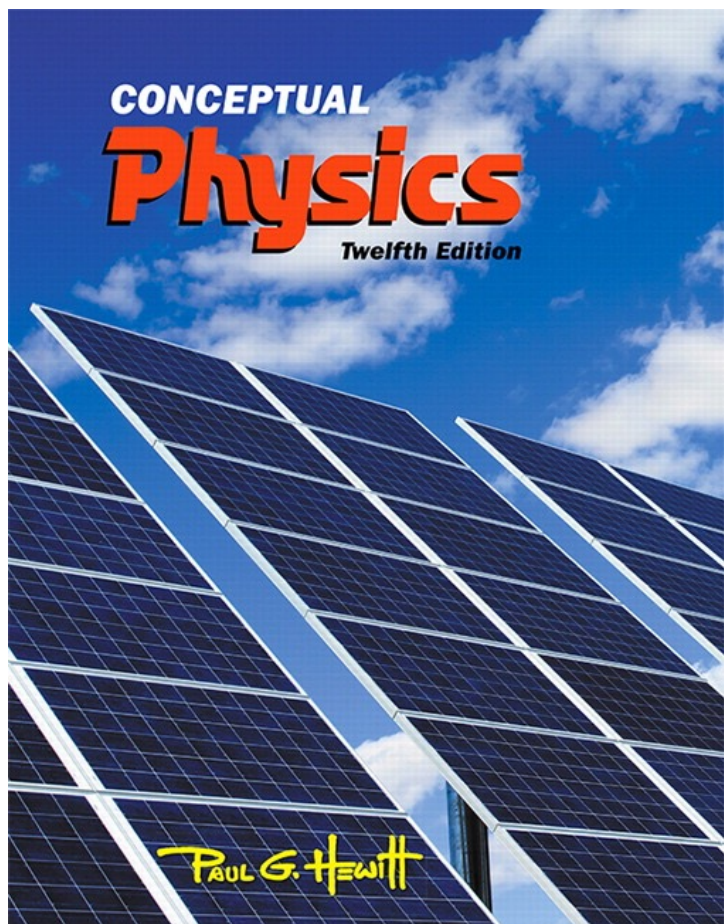
Dr. Rider has over 30 years of experience in science education and research:

[riderinstitute.org/education](http://riderinstitute.org/education)

[riderinstitute.org/about](http://riderinstitute.org/about)



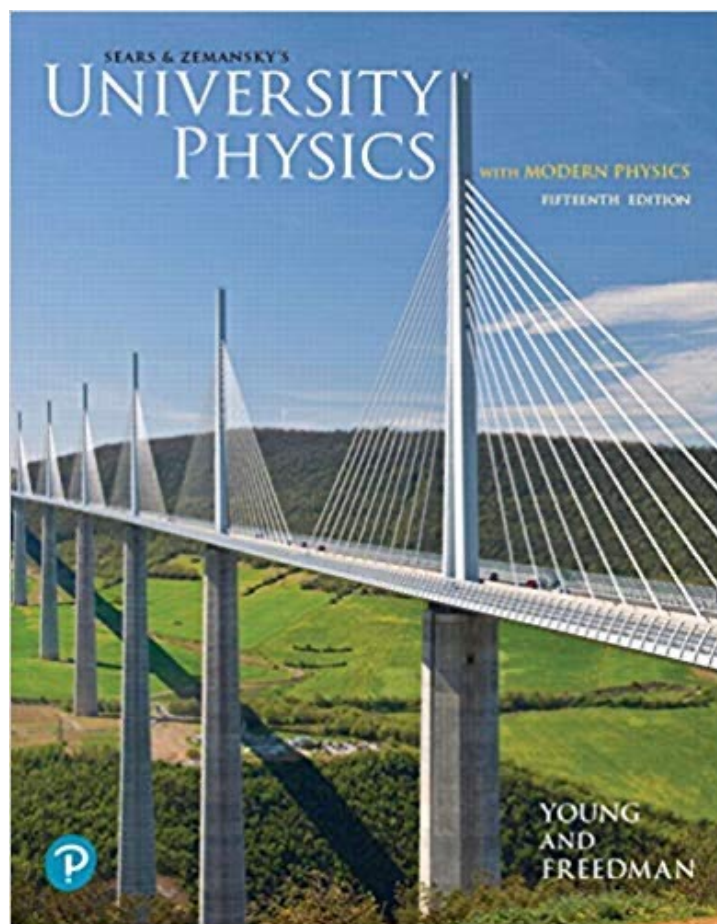
It is recommended (though not required) that students buy a physics textbook for supplementary readings during each week. Students can use **either** Paul Hewitt's *Conceptual Physics* **or** Young & Freedman's *University Physics with Modern Physics* (make sure it says that last part—some versions do not):



**For less advanced students**

12<sup>th</sup> ed. (2014)  
or  
11<sup>th</sup> ed. (2009)  
or  
10<sup>th</sup> ed. (2005)  
or  
9<sup>th</sup> ed. (2001)  
etc.

OR



**For more advanced students**

15<sup>th</sup> ed. (2019)  
or  
14<sup>th</sup> ed. (2015)  
or  
13<sup>th</sup> ed. (2011)  
or  
12<sup>th</sup> ed. (2007)  
etc.

New textbooks are insanely expensive, but more affordable used copies are available from reputable dealers at [amazon.com](https://www.amazon.com), [abebooks.com](https://www.abebooks.com), etc. You can also save money (without losing much scientific content) by buying an edition that is recent but not the very latest.

Don't pay for online access codes (those are just an expensive gimmick) and don't rent a book (a good printed textbook that you can keep is an invaluable resource that can be useful in later courses).