



## Introduction to the Major

**Physicists study phenomena spanning from the subatomic realms to the expansive universe and use this understanding to transform the world.**

As a physics major at Clark, you will study the fundamental laws and principles governing the universe, using theory, experiments, models, mathematical analysis, and computational techniques. We teach you to understand physical phenomena and to develop your problem-solving and analytical-thinking skills. You will be encouraged to participate in research in our world-class research facilities and to engage in collaborative work with faculty and graduate students.

### HIGHLIGHTS

- Year 1** Classical Physics
- Year 2** Computational Physics, Quantum Mechanics, and Relativity
- Year 3** Thermodynamics, Technology of Renewable Energy, Hands on Research
- Year 4** Statistical Physics, Advanced Topics

### CORE COURSES

The physics major at Clark is divided into three tracks: Comprehensive, Applied, and General. These tracks highlight the multiple directions our students can follow as they pursue a physics major at Clark and are flexible to meet each student's individual goals. The 3/2 engineering program is a five-year program offered in conjunction with Columbia University. The three physics tracks are:

- Comprehensive: For graduate physics preparation, engineering, industry, etc.
- Applied: For engineering, industry, finance, etc.
- General: For education, policy, law, medicine, etc.
- 3/2 Engineering Program with Columbia: Combine engineering and a liberal arts education

**Physics is the highest-earning natural science major**

**"You will explore the laws governing the natural universe and develop broad skills to address the diverse problems of the world."**

— PROFESSOR MICHAEL BOYER, CHAIR OF THE PHYSICS DEPARTMENT



## DESIGN YOUR JOURNEY



**Explore and navigate Clark curriculum**



**Connect and engage with communities**



**Discover and pursue your passions**



**Develop professional skills**



**Reflect, design and plan**

## YEAR 1

## YEAR 2



### □ **Explore the Physics Department**

Email [physics@clarku.edu](mailto:physics@clarku.edu) to coordinate a visit to the Math-Physics building and meet our faculty and staff. Ask about 3/2 Engineering. Our teaching laboratories and condensed matter physics research laboratories use state-of-the-art equipment. Talk with students and professors and review the department website to learn more about the physics major/minor.



### □ **Learn about campus resources**

Make ClarkYou your homepage and explore a new resource every week related to academics, health and wellness, campus life and student services.



### □ **Get connected**

Talk with graduate students about their research. Consider joining the Society of Physics Students and/or Women in STEM. Go to Fall Fest and ClarkFEST to learn about undergraduate research. Join faculty and peers during a weekly cookie time to chat informally with us.



### □ **Explore off campus**

Talk to students and faculty about their collaborations around the world. Volunteer at science outreach events to share your enthusiasm with others.



### □ **Reflect on what sparks your interest**

Consider what attracts you to the physics major. What classes have you enjoyed the most? What new interests do you have? Talk with your professors about which physics track will best match your goals.



### □ **Dig in and define your interests**

Work with your physics faculty adviser to identify which track best matches your post-Clark plans.



### □ **Declare your major**

Choose your major and track. If you are interested in the 3/2 Engineering program, meet with the program committee chair to review your plan.



### □ **Prepare for research**

Attend the undergraduate research meeting in the spring semester to learn more about faculty research and opportunities you might want to pursue. It's good to explore diverse projects but you will get the most out of your time if you can stick with one project for several semesters.



### □ **Start networking**

Start making connections with faculty, peers, and researchers by attending the department's weekly cookie minutes and seminar series. Drop in to the Career Lab for support building a portfolio or a LinkedIn profile.



### □ **Pre-flight check**

Make a course plan that will allow you finish all of the requirements for your track and the Program of Liberal Studies (PLS) requirements. Discuss this plan with your adviser.



### □ **Look back and look ahead**

What did you like most about your physics courses? Do you prefer experiments or theory? What do you want to do after you graduate? Answering these questions will help you move forward and identify research projects that excite you.

# WHAT CAN I DO WITH MY MAJOR?

## JOBS & EMPLOYERS

Physics teaches you to analyze and solve complex problems. Students go on to work in academia, engineering, technology, education, medicine, policy, law, and finance.

## GRADUATE PROGRAMS

Recent physics majors have gone on to graduate programs at Stanford, Chicago, Cornell, Brown, Carnegie-Mellon, Berkeley, USC, and British Columbia.

## YEAR 3



### Become a researcher

Physics research takes place in both the lab and the classroom. Opportunities are available to engage in research in the summer or during the semester as a directed study.



### Plan for senior year and beyond

Talk with your adviser about selecting a capstone project. If you are considering an honor's thesis, meet with your research adviser to develop a scope for this project and a plan of action.



### Go beyond the classroom

Work as a Peer Learning Assistant (PLA) for one of our introductory physics or astronomy courses. Mentor first- and second-year students.



### Test-fly your career

Find an internship for fall, spring, or summer. Meet with your career adviser to get started and join the Alumni Job Shadow Program to experience a day on the job in a physics-related field.



### Engage and strengthen your networks — on campus and off

Present your research and learn about what your fellow students are doing at ClarkFEST or at professional conferences. Attend career fairs and career-related events



### No regrets!

Have your interests changed since you made your course plan? Examine the choices you made in your first course plan and consider if additional classes (within or outside of the department) could strengthen your education.

## YEAR 4



### Pull it together with your capstone

Identify a capstone project that satisfies the requirements of your track, such as independent research or high-level coursework. Discuss these options with your adviser.



### What's next?

Explore if graduate school is right for you; speak to a faculty member and explore these resources. Connect with companies and organizations that interest you.



### Connect with alumni

Use ClarkCONNECT to connect with alumni, learn about their career paths, and make professional contacts.



### Share what you have learned

You can share your research at school events, regional conferences, and international meetings. If you are pursuing an honor's thesis, you will present your work to the department.



### Get ready to launch

Update your professional profiles including LinkedIn. Find ways to demonstrate qualities such as leadership, teamwork, problem-solving, and initiative.



### Ask the big questions

Having learned the laws and principles that shape our universe, you should now ask yourself what you want to do with them. You can push physics in new research directions, apply these laws to build new technologies, work to shape policy, educate the next generation, or something totally different. What change do you want to make in the world?



## AMPLIFY YOUR MAJOR!

**At Clark, your physics major extends beyond the classroom.**

Physics students learn valuable workplace skills such as solving technical problems, working in teams, designing and developing new technologies, and working with scientific equipment. Working together in the teaching labs and collaborating on problems sets hone these skills. Get the most out of your major by getting involved early in research and sticking with a project. Be an active member of the Physics Department by coming to seminars, cookie time, and engaging the community.

## CONNECT WITH US!

**Math-Physics Building, Physics, Room 241**

950 Main Street  
Worcester, MA 01610  
508-793-7169

[clarku.edu/departments/physics/](http://clarku.edu/departments/physics/)

### Advising

**All physics faculty are active teachers and researchers.**

Academic advisers can assist you with picking out classes and choosing a track. Research advisers will help you design and perform experiments and publish your results. .

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UNIVERSITY



Challenge Convention.  
Change Our World.

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