

Frequently Asked Questions

What's the structure of the course?

Each unit of the course consists of a handout with about 30 problems and a 1.5 hour one-on-one meeting to discuss them. Your job is to solve as many of the problems as you can, while my job is to evaluate your solutions, show the intuition behind the problems, tell you the ideas behind the problems you didn't solve, and give occasional hints. You can attempt the units in any order or combination, though there is a suggested order. For a list of the units, see the [syllabus](#).

I will not spend much time introducing the material; if it's new to you, it'll be your job to learn it by reading books. Relevant textbook chapters will be listed in each problem set.

When is the course?

Though I plan to take a few students during the summer for some more introductory training, the core curriculum will run from September to March. The meetings each week will be arranged to fit your schedule. Most of the month of March will be devoted to review and practice exams.

What's the cost?

Each unit costs \$250, broken up as \$100 for the handout and \$150 for the meeting. Usually students have one unit per week or one unit every other week. If you prefer, you can also arrange for more or fewer meetings, such as two meetings for a particularly long handout or one meeting for two handouts. I usually prepare biweekly or monthly invoices, depending on preference. Payment can be via PayPal or back transfer.

The core USAPhO material is covered in about 24 units. The full curriculum, which covers everything in the IPhO syllabus, is about 32 units long. It covers a large amount of material, roughly equivalent to the first two years of a typical undergraduate physics major, but with additional emphasis on problem solving.

The reason the cost is higher than a generic prep program is that all the teaching is done one-on-one, i.e. I'll spend the meeting time answering only your questions, and the explanations will be tailored to your background. I've experimented with other formats, but always found that one-on-one discussion is by far the most useful.

How do you select the students?

If you want to take part in this course, do the following:

- There is a [preliminary problem set](#) with a variety of basic problems on mechanics, electromagnetism, and thermodynamics. These problems should be approachable if you understand the core material in Halliday, Resnick, and Krane. Solve the problems and write up your solutions, as described in the syllabus. Email me your solutions by **8/23**.
- Along with your solutions, tell me about your past performance on the $F = ma$ and USAPhO exams, your goals for the training, and where you've learned physics from.

This problem set will be representative of the problem sets in the course, so by doing it, you'll also find out if you'll enjoy taking part in the course. Feel free to email me for clarifications or hints!

How have previous students performed?

I'll list the performances of my students before and after training. For the 2017/2018 academic year I took two students, whose progress was:

- USAPhO Gold → USAPhO Camp, IPhO Gold
- did not participate → USAPhO Camp

For the 2018/2019 academic year I took four students, whose progress was:

- USAPhO Camp → USAPhO Camp
- USAPhO Gold → USAPhO Gold
- USAPhO Bronze → USAPhO Silver
- USAPhO qualification (no medal) → USAPhO Gold

For the 2019/2020 academic year, I plan on taking three students.

How difficult are the problems?

See the two sample problem sets on [my website](#). These are about average in difficulty. The first few handouts (**P1**, **P2**, **M1**, **E1**) are a notch easier, while others (**M6**, **E8**, **R3**) are a notch harder.

What other things can I do to prepare?

See my [advice on learning introductory physics](#) for more references. If you've qualified for USAPhO but haven't gotten at least a USAPhO silver medal yet, two good resources are Halliday, Resnick, and Krane and the Art of Problem Solving PhysicsWOOT program. If you want tutoring at a more introductory level, e.g. for passing the $F = ma$, I can refer you to other tutors.