Physical Sciences Frequently Asked Questions

September 2, 2006

What are the Physical Science courses?

Physical Sciences 1, 2, and 3 present an introductory treatment of college physics and chemistry in three semesters. The courses are thematically driven with the themes being related to major societal issues and biological systems. The Physical Sciences sequence is intended to teach physical concepts in a way that is immediately relevant to students in the life sciences. These courses will satisfy the one semester of the general chemistry and two semesters of the physics required by medical schools.

Who should take PS 1?

Physical Sciences 1 is appropriate for a wide range of students:
- First year students who take Life Sciences 1a in the fall will likely want to take Physical Sciences 1 in the spring.
- Students who want to fulfill the pre-medical requirement or a concentration requirement for general chemistry will often take PS 1 after LS 1a.
- Students concentrating in the humanities or social sciences who want to learn about the physical principles governing the world we live in are encouraged to take PS 1.

Who should take PS 2 and PS 3?

Physical Sciences 2 and 3 are appropriate for a wide range of students:
- Students who were planning to take Physics 1a and 1b should enroll in PS 2 and PS 3.
- Students can fulfill the pre-medical requirement for physics with PS 2 and PS 3.
- PS 2 and 3 will satisfy the physics requirement for all Life Science concentrations except for Chemical and Physical Biology and Chemistry (honors).
- Students concentrating in the humanities or social sciences who want to learn about the physical principles governing the world we live in are encouraged to take PS 2 and PS 3.

Who should take Physics 11a/b, Physics 15a,b,c, or Physics 16?

Students who are considering concentrating in physics should take Physics 15a or 16. Students who are considering the Chemistry (honors), Chemical and Physical Biology, Earth and Planetary Sciences, or Engineering Science concentrations will usually enroll in Physics 11a/b or Physics 15a/b/c. If you have questions about which Physics course to take consult Dr. David Morin in the Physics Department or your concentration advisor.

Can I take PS 3 before taking PS 2?

Students are strongly encouraged to take PS 3 after taking PS 2 for PS 3 will build on the material in PS 2 and it has been designed with the assumption that you are familiar with the concepts introduced in PS 2.

What is the difference between PS 1 and Chem 7?

PS 1 has been specially designed to teach chemistry as a physical science emphasizing the relevance of the physical principles for scientific research, everyday life, and the global community.

What is the difference between PS 2/3 and Physics 1a/b?

PS 2 and 3 have been specially designed for students concentrating in the life sciences. The choices of topics and examples reflect the current needs of life scientists.

What is the difference between PS 2/3 and Physics 11a/b?
PS 2 and 3 have been specially designed for students concentrating in the life sciences and teach chemical and physical principles in the context of living systems. There is significant overlap in the topics addressed in PS 2/3 with Physics 11a/b but the two sets of courses are distinctly different.

Do PS 1, 2 and/or 3 count for core credit?

When taken for a letter grade, PS 1 and PS 2 each meet the Core area requirement for Science A. PS 3 is currently under review by the Core.

Can PS 1 count for degree credit if I've already passed Chem 7?

No.

Can PS 2 count for degree credit if I've already passed Physics 1a, 11a, 15a, or 16?

No.

Can PS 3 count for degree credit if I've already passed Physics 1b, 11b, or 15b?

No.

What math background do I need for PS 1?

A few operations of calculus are introduced and used. Fluency in pre-calculus secondary school mathematics is assumed.

What math background do I need for PS 2 and 3?

Calculus will be used so students should be familiar with basic derivatives, integration, and differential equations at the level of Math 1b, which is a prerequisite. Students are encouraged to complete Math 1b before enrolling in PS 2, however Math 1b can be taken concurrently with PS 2.

Are there any prerequisites for PS 1?

There are no formal prerequisites for PS 1. A few operations of calculus are introduced and used. Fluency in pre-calculus secondary school mathematics is assumed. Students who have placed into Math Xa may want to consider postponing enrollment in PS 1 until they have completed this course.

Are there any prerequisites for PS 2 and PS 3?

The prerequisites for PS 2 are PS 1 (or Chem 7) and Math 1b, or equivalent. The prerequisites for PS 3 are PS 2 (or Phys 1a or 11a) and Math 1b, or equivalent.

Will Chem 7 be offered in 2006-07?

Chem 7 will no longer be offered; it has been replaced by PS 1.

If I took Physics 1a previously, what physics course should I take next?

You should take PS3 which has replaced Physics 1b.

Will Physics 1a and 1b be offered in 2006-07? What about Physics 11a and 11b?

Physics 1a and 1b will no longer be offered; they have essentially been replaced by PS 2 and 3. Physics 11a and 11b have not changed and will continue to be offered.
Can I take PS 1 for credit if I accept Advanced Standing with AP scores of 5 in Chemistry?

Students who have an AP score of 5 are welcome in PS 1, however a student cannot apply an AP score of 5 on the Chemistry exam towards Advanced Standing if they complete PS 1.

Can I take PS 2 and/or PS 3 for credit if I accept Advanced Standing with AP scores of 5 in Physics?

Students who have an AP score of 5 are welcome in PS 2 and 3, however a student cannot apply an AP score of 5 on the Physics B and C exams towards Advanced Standing if they complete PS 2 and 3.

Will these courses count for pre-medical requirements?

Yes. PS 1 fulfills one semester of the general chemistry with laboratory requirement. PS 2 and 3 together will fulfill the requirement for one year of physics with laboratory.

Will PS 1, 2 and 3 prepare me for the MCAT?

Physical Sciences 1, 2 and 3, like all introductory science courses at Harvard, cover much of the material required for the MCAT. However, as these courses are not specifically designed to prepare students for the MCAT, there may be some topics that are included on the MCAT but not covered in your science classes at Harvard. You are encouraged to read the MCAT Student Manual, which describes in detail the content of the physical science and biological science sections of the MCAT.

Will PS 1 count for concentration credit in the life science cluster?

Yes. PS 1 will be accepted as a general chemistry course by all the new life science concentrations.

Will PS 1 count for concentration credit in life science concentrations like Biology or Biochemical Sciences?

PS 1 will fulfill one semester of the general chemistry requirement for Biology and Biochemical Sciences.

Which concentrations will NOT accept PS 1 as part of a general chemistry requirement?

All concentrations will accept PS 1 as fulfilling one semester of any general chemistry requirement.

Will PS 2 and/or PS 3 count for concentration credit in the life science cluster?

PS 2 and PS 3 will be accepted for concentration credit in Human Evolutionary Biology, Molecular and Cellular Biology, Neurobiology, Organismic and Evolutionary Biology, and the Biological Anthropology track. They are not accepted by Chemical and Physical Biology, and will not satisfy the honors requirement for physics in the Chemistry concentration.

Will PS 2 and/or PS 3 count for concentration credit in life science concentrations like Biology or Biochemical Sciences?

PS 2 and PS 3 will fulfill the physics requirement for Biology and Biochemical Sciences in both the basic and honors degrees.

Which concentrations will NOT accept PS 2 and 3 for their physics requirement?

PS 2 and PS 3 will NOT be accepted by Chemical and Physical Biology, Engineering Sciences, Earth and Planetary Sciences, Physics, Chemistry and Physics, or Chemistry (honors).