

Academic Support in the Department of Physics and Astronomy

Because learning means growth, there may well be times in courses in this department when you feel confused. That is a good thing. We ask you to embrace your confusion, because confusion means progress. It means you are shedding old ideas as new ones come online. It means you are deeply engaged with the material, rather than skimming the surface. We as instructors will do all we can to make sure that the confusion is productive confusion, and to facilitate the transition from confusion to clarity (and then into the next patch of confusion that inevitably awaits).

Professional scientists, nearly without exception, work in teams. The best scientific work is done when individuals prepare thoroughly and then come together to discuss their ideas and resolve their difficulties. The same is true of science learning; research indicates that the best learning experiences involve a finely tuned balance between individual effort, discussion, teamwork, and feedback from the instructor. We have a number of support structures in place to facilitate this balance:

Photons: The Physics & Astronomy Department has an extensive academic support program designed to assist students taking courses in the department. Much of this support is provided by experienced students - *Photons* - who are carefully selected and trained to facilitate peer learning. The Photons review course content with course faculty, learn pedagogical principles and practices, and facilitate group problem solving in class and at weekly Photon sessions. This program is therefore also designed to help older students learn how to teach and mentor.

- **Meet the Fall 2020 Photons:** *Coming soon!*
- **Become a Photon:** We are always looking for enthusiastic new Photons, so please be in touch with any department faculty member if you are interested in becoming one.

Weekly Photon Sessions: The Photons associated with a particular course frequently assist with activities in the classroom and also facilitate weekly (usually evening) sessions for students in a given course. Students are encouraged to attend these sessions if they have questions about course content, if they want to work with classmates on problem sets, or if they just want to meet other students.

- **Which courses offer Photon sessions?** We currently offer weekly Photon sessions for ASTR 001, ASTR 014, ASTR 016, PHYS 003/003L, PHYS 004/004L, PHYS 005, PHYS 007, PHYS 008/008S, PHYS 013/015, and PHYS 017/018.

- **When are Photon sessions offered?** Each course schedules evening Photon sessions on particular days, and that schedule will be available at the start of each semester.
- **What atmosphere can I expect at Photon sessions?** Photon sessions are designed to be casual, interactive, and low-stress. Many students in the department have reported that the weekly Photon sessions are an essential factor in their success. We value every student taking classes in our department and are committed to providing the support and atmosphere necessary for all students to focus on their learning and be treated with respect - please read [our department's diversity, equity, and inclusion statement](#). Also, the Photon sessions feature SNACKS whenever possible!
- **Who can make use of weekly Photon sessions?** Anyone enrolled in a course that has associated Photons is welcome to attend the sessions. Coming in small groups is very much encouraged, so invite your classmates to attend with you!
- **How do I use the Photon sessions effectively?** It is often helpful to first try problems on your own, and then bring questions you have about those problems to the Photon sessions. You should come prepared to work in groups with your classmates, so that you can share ideas and work collaboratively. The Photons are there to help you succeed, not to do your homework for you! They will facilitate your work with other students and answer questions when they can, but Photon sessions work best when students come prepared to interact with each other.

Individualized Tutoring: The college also offers opportunities for students to receive individualized tutoring, if students feel that the support structures offered by course faculty and student Photons are insufficient. Students should contact their course faculty member(s) to request a tutor.