

Course Syllabus

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Instructor and Course Info



Instructor: [Dr. Julia Kregenow](http://astro.psu.edu/people/jmk50) () (<http://astro.psu.edu/people/jmk50>)

TA Coordinator: [Dr. Christopher Palma](http://astro.psu.edu/people/cxp137) () (<http://astro.psu.edu/people/cxp137>)

Office Hours: please drop by anytime I'm in, or feel free to set up an appointment in advance

Class Meeting Location: 432 Davey Lab

Class Meeting Time: Tuesdays, 10:00am - 11:00am

Start Date: Tue Aug 22, 2017

Course Credits: 1



Last updated: 21 Aug, 2017: updated info for Fall 2017

Course Description

ASTRO 602 aims to provide graduate students and other early-career or otherwise open-minded teachers (or those thinking about teaching) with the background knowledge, skills, and resources to be an effective teacher. This course is distinct from -- but complementary to -- the weekly TA meeting for all TAs (including returning TAs), which provides you with guidance and support to be a TA, and includes practical preparation for each upcoming week's teaching duties. The 602 class will focus instead on discussion of general teaching principles, tools, and strategies. Astro 602 is also more broadly applicable to giving presentations to a variety of audiences, including research and outreach talks.

Course Objectives

- To provide graduate students with the necessary preparation, tools, guidance, and support to successfully complete their teaching duties in the PSU Astronomy Department.
- To pass on some pedagogical, as well as practical, wisdom regarding teaching -- in particular teaching astronomy, and especially to an audience of non-scientists.
- To allow participants to reflect on their own past and current experiences and beliefs about teaching and learning.
- To all share and discuss ideas and strategies for successful teaching.
- To provide a broad survey of principles of good teaching, course design, planning, assessment, and tools for improvement.
- To provide direction for TAs who may wish to pursue teaching more in their future careers.
- To not waste anyone's time!

Course Format

The course will provide a structured, but flexible, atmosphere for the exchange of ideas on important issues related to teaching and learning. The primary methods include in-class discussion and weekly out-of-class assignments.

Classroom atmosphere

It'll definitely be relaxed and relatively informal in this class, but it's still important to keep it civil and respectful. When somebody is speaking, please give them your full attention. Discussion and interaction between all members of the group is an important part of this class. No electronic devices please -- these are distracting to your neighbors. If you have a strong preference for using a laptop or tablet for notetaking, please discuss this with the instructor privately first.

Typical Weekly Class Structure:

1. Collect homework due that day (usually submitted online before class); discuss if needed
2. Discuss assigned reading due that day
3. Discuss new topics for that day
4. Sometimes (but not always) — Discuss next homework assignment (but even if we don't, please still do it! It will be announced on the [Announcements](#) (📧) page.)

Reading

Required Text: There will be required reading each week for this class. All readings will be available online, or else provided in hardcopy, so you do not need to purchase any books. Weekly required readings will be announced as they come up on this course page.

Reading assignments are due before the class meeting time, as they will be discussed in that day's class. For each reading assignment, enrolled students are required (and visitors are encouraged) to make notes while (and after) reading, and bring these to class to refer to in our discussion:

- briefly summarize the main points of the reading in your own words,
- make a note if there is anything that you find (1) particularly relevant or personally interesting, or (2) not relevant or useful to your teaching, or science teaching in general, and most importantly,
- distill what you felt was the main point of the reading into one sentence. All students will be asked to read aloud their one-sentence summaries at the beginning of class. This will help guide the day's reading discussion by revealing common observations or comments.

Suggested Text: Additional suggested readings on teaching topics that may be of interest to you will be posted on this course page. These are available for your reference at any time during your work / studies at Penn State. If you have any difficulty accessing them after the course is over, just let me know. If you find any of them especially valuable and relevant to the ASTRO 602 mission, feel free to let me know and nominate them for promotion to required reading. Please also consider suggesting which of the required reading(s) should be demoted to make room. Moreover, if you encounter excellent readings on teaching topics that you think would make good additions to the ASTRO 602 reading list, kindly let me know. I am

always seeking to update and improve our reading list.

For current Astro 11 instructors, many more materials relevant to that class are posted under the canvas group "Astronomy 11 TA materials repository" -- a group to which all Astro 11 instructors should all have access. (Look under your Canvas "Courses" screen, on the left side. If you don't see that "course" appearing, let me know ASAP so I can add you to the list of editors.)

Assignments

The assignments are designed to either put into practice the ideas discussed in class, introduce new ideas not yet discussed, or afford participants an opportunity to reflect on their own thoughts and beliefs. Some assignments do more than one of these. The assignments involve a variety of types including a good deal of reading and writing, but also some data analysis (yay!), visiting other teachers' classes and documenting what you see (field work!), and preparing and delivering your own "Astro 101" (or similar) lecture.

Tentative Schedule

Note: This schedule is subject to change as the semester progresses. Assignments and readings will be announced each week for the following week, and are posted on the [Announcements](#) (☐) page.

Week	Dates	Assignments (due following week)	Tentative Discussion Topics
0	Aug 14-15	TA appointment begins Mon Aug 15; new TA orientation (see details at right); lab instructors should complete lab writeups	No Astro 602 (classes start next week). New TA orientation is Mon and Tue: do first 4 labs, Canvas & LionPath, FERPA quiz, your role as a TA, planning first class, setting tone the first day, syllabus, making expectations clear
1	Aug 22	Assignment #1: post to a discussion board Readings: "The First Day of Class" (x3)	Nametags. Why be a TA? Why 602? Big Ideas for semester. Overplanning. Who are your students? What motivates them? Brainstorm: What impression do you want to make? Our goals for this semester in this class?
2	Aug 29	Assignment #2: write questions at different levels Reading: Mindsets	Bloom's taxonomy (levels of learning). Mindsets
3	Sep 5	Assignment #3: observe, compare/contrast 2 lectures Reading: grading (x2)	Mindsets (redux). Responding to questions in class.
4	Sep 12	Assignment #4: schedule your lecture Reading: classroom management	Facilitating group work; problem groups.

Week	Dates	Assignments (due following week)	Tentative Discussion Topics
5	Sep 20	Assignment #5: prepare a short board work presentation Reading: distracting technology use in the classroom	Classroom Management, Boardwork
6	Sep 26	Assignment #6: plan goals of your lecture Reading: midterm evals	Deliver board work lessons, Policing technology in the classroom
7	Oct 3	Assignment #7: create and give a feedback survey Reading: 6 ways to discourage learning, and fostering participation	Getting feedback on your teaching, Motivating Students (choice, authentic questions, appropriate challenges... see BGD for more)
8	Oct 10	Assignment #8: analyze survey results Reading: Cheating Lessons & Positive Solution for Plagiarism	Academic Integrity, Future: Competence / Warmth, Nonverbal cues / acting
9	Oct 17	Assignment #9: design two powerpoint slides Reading: The Unwritten Rules of College	Private Universe, Learned Helplessness, Math anxiety (causes pain!)
10	Oct 24	Assignment #10: words matter Reading: "Astro 101": Ch 1&2	Competence / Warmth, Nonverbal cues / acting
11	Oct 31	Assignment #11: correct a misconception Reading: "Astro 101": Ch 3&4	Setting goals, Backward Design
12	Nov 7	Assignment #12: syllabus first impression Reading: "Astro 101": Ch 5 Active Participation	Facilitating class discussions, visual thinking strategies
13	Nov 14	Assignment #13: mental brownout & multitasking Reading: Familiarity vs. Recall, and Incompetent Knowledge	Teaching Philosophy Discussion I (tentative)
-	Nov 21	Thanksgiving Break -- No Class	-

Week	Dates	Assignments (due following week)	Tentative Discussion Topics
14	Nov 28	Assignment #14: write your own teaching philosophy (due in two weeks) Reading: The Curse of Knowledge	Teaching Philosophy Discussion II (tentative)
15	Dec 5	Assignment #14: teaching philosophy (continued) Reading: none	your teaching philosophy, Best & Worst teachers, take-home messages for semester, teaching opportunities
Finals	Dec 11-15	none -- no final exam	no class -- finish up your teaching philosophy (final assignment)

Note: This schedule is subject to change as the semester progresses. Assignments and readings will be announced each week for the following week, and are posted on the [Announcements](#) (🗉) page.

Course Requirements

Attend all class meetings. (see attendance policy below) Complete all course readings AHEAD of meeting time to be prepared for discussion. Participate in class discussions. Turn in all course assignments on time.

Course Prerequisites

none

Course References

For TAs interested in developing their teaching further, the Schreyer Institute for Teaching Excellence offers a highly-regarded Course in College Teaching, which is a free 8-week course offered each year in September and October to faculty and TAs from all ranks and disciplines. This course will help you develop your teaching skills far beyond what we cover in this class. Students completing this course receive a certificate, which although it is not formal "certification" of anything, can be included in your teaching portfolio as evidence of your professional development as a teacher. The Graduate School also offers a "Graduate Teaching Certificate", for which the Course in College Teaching is a requirement. For more information on the other requirements, see <http://www.gradsch.psu.edu/current/tacert.html>.

Grading Policy

A: Attend all class meetings on time (except in case of emergency or unavoidable absence), complete all assignments on time with an honest effort, participate in class discussions.

B: Miss 2 or more class meetings with unexcused absence, or neglect to turn in one or more assignments, or consistently turn in assignments late, or consistently fail to participate in class discussions or consistently

arrive to meetings late.

C: Miss 4 or more class meetings with unexcused absence, or neglect to turn in majority of assignments, or fail to participate in most or all class discussions.

D or F: anything worse than above

Attendance Policy

Attendance at all class sessions is required. Since the biggest part of the class is discussion and interaction with other students and the instructor, you have to be there in order to participate in this! Excused absences will be permitted within reason; please notify both instructors ASAP in case of unavoidable absence.

Exam Policy

No exams.

However, as a capstone semester project, you will be asked to prepare and give an Astronomy lesson or lecture at the introductory level (or advanced undergraduate level, if you prefer), for which you will receive feedback. Moreover, if you are teaching a lab or an activity this semester your class or activity may be visited by instructors and/or other TAs to give you constructive feedback and to help share ideas among TAs. *These are not tests.* These activities and their associated feedback are purely to help you improve.

Academic Integrity



You will be asked to do some writing for several of the assignments; don't plagiarize, obviously. If you use a source, cite it. If you'd like to turn in work you've previously done for another purpose (maybe another class, but doesn't have to be), please ask the instructors' permission to do so. Please see the Eberly College of Science [Academic Integrity page \(☐\) \(http://science.psu.edu/current-students/Integrity/Policy.html\)](http://science.psu.edu/current-students/Integrity/Policy.html) for full details of the policies to which we will abide.


University Resources

Disability Policy: Penn State welcomes students with disabilities into the University's educational programs. If you have a disability-related need for reasonable academic adjustments in this course, contact the Office of Student Disability Resources (SDR) by phone at 814-863-1807 (V/TTY), or online at [equity.psu.edu/student-disability-resources/forms/contact-ods-form \(☐\) \(http://equity.psu.edu/student-disability-resources/forms/contact-ods-form\)](http://equity.psu.edu/student-disability-resources/forms/contact-ods-form). For further information regarding SDR, please visit the Office of Student Disability Resources Web site at [equity.psu.edu/student-disability-resources/ \(☐\) \(http://equity.psu.edu/student-disability-resources/\)](http://equity.psu.edu/student-disability-resources/).






In order to receive consideration for course accommodations, you must contact SDR and provide documentation (see the documentation guidelines at [equity.psu.edu/student-disability-resources/guidelines \(☐\) \(http://equity.psu.edu/student-disability-resources/guidelines\)](http://equity.psu.edu/student-disability-resources/guidelines)). If the documentation supports the need for academic adjustments, SDR will provide a letter identifying appropriate

academic adjustments. Please share this letter and discuss the adjustments with your instructor as early in the course as possible. You must contact SDR and request academic adjustment letters at the beginning of each semester.

Helping you succeed: The Eberly College of Science is committed to the academic success of students enrolled in the College's degree programs. Find links to help resources at science.psu.edu/current-students/support-network/advising () (<http://science.psu.edu/current-students/support-network/advising>) and science.psu.edu/current-students/support-network/learning-support () (<http://science.psu.edu/current-students/support-network/learning-support>).

Mutual Respect: "The Eberly College of Science Code of Mutual Respect and Cooperation" (science.psu.edu/climate/code-of-mutual-respect-and-cooperation) () (<http://science.psu.edu/climate/code-of-mutual-respect-and-cooperation>.) embodies the values that we hope our faculty, staff, and students possess and will endorse to make The Eberly College of Science a place where every individual feels respected and valued, as well as challenged and rewarded.

Course Summary:

Date	Details	
Tue Aug 22, 2017	 First Day of Class (https://psu.instructure.com/calendar?event_id=2792068&include_contexts=course_1854410)	9am to 10am
Tue Aug 29, 2017	 Assignment #1: Start the Discussion (https://psu.instructure.com/courses/1854410/assignments/9288504)	due by 9:55am
Tue Sep 5, 2017	 Assignment #2: Write questions at different levels (https://psu.instructure.com/courses/1854410/assignments/9288503)	due by 9:55am
Tue Sep 12, 2017	 Assignment #3: Observe and comment on 2 Introductory Astronomy lectures (https://psu.instructure.com/courses/1854410/assignments/9288505)	due by 9:55am
Tue Sep 19, 2017	 Assignment #4: Schedule your astronomy lecture (https://psu.instructure.com/courses/1854410/assignments/9288506)	due by 9:55am
Tue Sep 26, 2017	 Assignment #5: Boardwork (https://psu.instructure.com/courses/1854410/assignments/9288507)	due by 9:55am
Tue Oct 3, 2017	 Assignment #6: Plan the Goals of your Lecture (https://psu.instructure.com/courses/1854410/assignments/9288496)	due by 9:55am