

ASTR 320
Philosophy and History of Astronomical Thought

Spring 2017
Tuesdays and Thursdays, 12:30-1:45 pm, Steward 204

SYLLABUS

ASTR320 covers the History and Philosophy of Astronomy, from prehistorical times to the present. The story of astronomy is central to the history of science and to the history of thought in general. It also plays a principal role in the narratives about this development as told by various historians with their differing philosophies and presumptions. We shall learn to identify such underpinnings also in today's public discourse. The course entails several written assignments.

Course Syllabus: Your Roadmap to ASTR 320

Disappointment and misunderstanding often arise because of miscommunication of expectations. The goal of this document is to minimize such issues, serving as a "contract" between teachers and students.

Course Materials

There is **no required textbook** for this course. Material will be made available through D2L. Once you register in ASTR320 you will see the course appear under your Student Tab. It is where you go to know what to do.

Honors Contract

"Students wishing to contract this course for Honors Credit should email me to set up an appointment to discuss the terms of the contract and to sign the Honors Course Contract Request Form. The form is available at www.honors.arizona.edu/documents/students/ContractRequestForm.pdf."



Instructor: Pavol "Paul" Gabor, S.J., Ph.D.
 Email: pgabor@as.arizona.edu
 Office: Steward Observatory, Room N209B
 Phone (office): (520) 621-6043
 Bio: vaticanobservatory.va

Dr. Gabor will respond to your emails within 24 hrs, Mon-Fri.

Office Hours

| | |
|----------|---------------------|
| Monday | 11:00 am – 12:00 pm |
| Tuesday | 1:45 pm – 2:15 pm |
| Thursday | 1:45 pm – 2:15 pm |

You can also set up an appointment at other times.

Activities & Grading

The final course grades will be on a curve, but you can be assured that if your weighted average is > 90% you will receive an A, 80 to 90% at least a B, 65 to 80% at least a C, and 50 to 65% at least a D.

Your grade will be based on the weighted average of the following components:

| COMPONENT | | # | @ | sub/total |
|-------------------|----------|---|---------|-----------|
| reading exercises | online | 7 | 1-3 pts | 15 pts |
| précis | writing | 5 | 5 pts | 25 pts |
| bibliography | writing | 3 | 8 pts | 24 pts |
| test | in class | 3 | 12 pts | 36 pts |
| | | | | 100 pts |

The requirements for written work will be explained and the assessment criteria will be expressed in appropriate rubrics.

Course Schedule

See the D2L "Calendar" tool (remember to set "Display Options" >> "Course Events" appropriately). For an illustrative draft, see the attached sheet. Course material and activities may not follow the exact dates indicated in the draft with the notable exception of the three tests. Tests will be administered on the dates given in the schedule: (1) Feb 16, (2) March 28, and (3) May 10 (as set by the Registrar).

Attendance & Active Participation

"The UA's policy concerning Class Attendance, Participation, and Administrative Drops is available at catalog.arizona.edu/policy/class-attendance-participation-and-administrative-drop. The UA policy regarding absences for any sincerely held religious belief, observance or practice will be accommodated where reasonable, <http://policy.arizona.edu/human-resources/religious-accommodation-policy>."

"Participating in course and attending lectures and other course events are vital to the learning process. As such, attendance is required at all lectures and discussion section meetings. Students who miss class due to illness or emergency are required to bring documentation from their healthcare provider or other relevant, professional third parties. Failure to submit third-party documentation will result in unexcused absences."

Etiquette

Everyone in the class is expected to abide by and follow the UA's Student Code of Conduct [public.azregents.edu/PolicyManual/5-308-Student Code of Conduct.pdf](http://public.azregents.edu/PolicyManual/5-308-Student%20Code%20of%20Conduct.pdf)

"To foster a positive learning environment, students and instructors have a shared responsibility. We want a safe, welcoming and inclusive environment where all of us feel comfortable with each other and where we can challenge ourselves to succeed. To that end, our focus is on the tasks at hand and not on extraneous activities (i.e. texting, chatting, reading a newspaper, making phone calls, web surfing, etc.)." Food and drink (except for water) is not permitted in Steward classroom 204.

"Students are asked to refrain from disruptive conversations with people sitting around them during lecture. Students observed engaging in disruptive activity will be asked to cease this behavior. Those who continue to disrupt the class will be asked to leave lecture or discussion and may be reported to the Dean of Students."

"The UA Threatening Behavior by Students Policy prohibits threats of physical harm to any member of the University community, including to one's self. See policy.arizona.edu/education-and-student-affairs/threatening-behavior-students."

UA Nondiscrimination and Anti-harassment Policy

"The University is committed to creating and maintaining an environment free of discrimination, policy.arizona.edu/human-resources/nondiscrimination-and-anti-harassment-policy."

Late Work

No credit, with no exceptions, will be given for late work. In order to be fair to those that turn in their work on time, late work will not be accepted. If you are concerned about not being able to turn in your work on the due date, please turn it in early! **Err on the side of prudence!** If you choose to wait until a few hours before the deadline to do your assignment, you are taking a risk. Should your printer break, internet go down, or an emergency arise, these will NOT be valid excuses.

Missed Tests

No makeup tests, with no exceptions, will be administered. The tests are already scheduled and posted on the class schedule. If you know that you will miss a test, for valid reasons, contact the instructor as soon as possible.

Makeup Credit?

Near the end of term, there will be no makeup or extra credit assignments. Do not expect to compensate for poor work at the end of the term with additional work.

Disputing Grades

You have one week from the time an assignment or exam is returned to challenge any perceived errors. Although rare, there are occasions when grading errors occur, and you should review your returned work.

Academic Honesty

"Students are encouraged to share intellectual views and discuss freely the principles and applications of course materials. However, graded work/exercises must be the product of independent effort unless otherwise instructed. Students are expected to adhere to the UA Code of Academic Integrity as described in the UA General Catalog. See deanofstudents.arizona.edu/academic-integrity/students/academic-integrity. *Selling class notes and/or other course materials to other students or to a third party for resale is not permitted without the instructor's express written consent.* Violations to this and other course rules are subject to the Code of Academic Integrity and may result in course sanctions. Additionally, students who use D2L or UA email to sell or buy these copyrighted materials are subject to Code of Conduct Violations for misuse of student email addresses. This conduct may also constitute copyright infringement."

Accessibility and Accommodations

"Our goal in this classroom is that learning experiences be as accessible as possible. If you anticipate or experience physical or academic barriers based on disability, please let me know immediately so that we can discuss options. You are also welcome to contact Disability Resources (520-621-3268) to establish reasonable accommodations. For additional information on Disability Resources and reasonable accommodations, please visit <http://drc.arizona.edu/>. If you have reasonable accommodations, please plan to meet with me by appointment or during office hours to discuss accommodations and how my course requirements and activities may impact your ability to fully participate. Please be aware that the accessible table and chairs in this room should remain available for students who find that standard classroom seating is not usable."

Subject to Change Statement

"Information contained in the course syllabus, other than the grade and absence policy, may be subject to change with advance notice, as deemed appropriate by the instructor."

| Date | Material | Assignment due |
|-------------------|--|-----------------------|
| | | online |
| | | written |
| Thu 12 Jan | Cosmic scales. Introduction | |
| Tue 17 Jan | Night sky. Archaeoastronomy | Reading 1 |
| Thu 19 Jan | Babylonians. Egyptians | |
| Tue 24 Jan | Pythagoreans. Miletians | Reading 2 |
| Thu 26 Jan | | |
| Tue 31 Jan | Plato. Saving the Phenomena. Eudoxus | Reading 3 |
| Thu 02 Feb | Eratosthenes | |
| Tue 07 Feb | Aristotle | Précis 1 |
| Thu 09 Feb | Hipparchus | |
| Tue 14 Feb | Ptolemy | Reading 4 |
| Thu 16 Feb | Test 1 | |
| Tue 21 Feb | Aristotle's physics | Reading 5 |
| Thu 23 Feb | | |
| Tue 28 Feb | Copernicus | Reading 6 |
| Thu 02 Mar | Tycho Brahe | |
| Tue 07 Mar | Kepler | Précis 2 |
| Thu 09 Mar | | |
| Tue 14 Mar | SPRING RECESS | |
| Thu 16 Mar | SPRING RECESS | |
| Tue 21 Mar | Galileo | Bibliography 1 |
| Thu 23 Mar | Riccioli | |
| Tue 28 Mar | Test 2 | |
| Thu 30 Mar | Descartes | |
| Tue 04 Apr | Newton | Précis 3 |
| Thu 06 Apr | Halley. W. & C. Herschel | |
| Tue 11 Apr | Photography. Spectroscopy | Bibliography 2 |
| Thu 13 Apr | Astrophysics | |
| Tue 18 Apr | Nebulae and the Galaxy. Shapley. Curtis. The Great Debate. Hubble | Reading 7 |
| Thu 20 Apr | Extraterrestrials. Atomists, Epicureans, Cusanus, Bruno, Fontenelle. | Précis 4 |
| Tue 25 Apr | | Précis 5 |
| Thu 27 Apr | Historiography. Flat Earth, "martyrs of science", progress. Whig history | |
| Tue 02 May | | Bibliography 3 |
| Thu 04 May | READING DAY | |
| Wed 10 May | 1 - 3 pm: Test 3 | |