

ASTR 204

Great Debates in Astronomy

Honors Section
Spring 2013

SYLLABUS

ASTR204 to demonstrate scientific methodology, concentrating on several contemporary debates as well as some which have been quintessential for 2,500 years. The topics may vary: the discovery of the Higgs boson, supraluminar neutrinos, the arrow of time, UFOs, Copernican revolution, life in the Universe, rare Earth, etc. Concepts and arguments will be explained by the teacher, and the student will engage in debates. For each in-class debate two groups of students will prepare the arguments and counter-arguments for and against, and the rest of the class will adjudicate, compiling a written report. Evaluation will focus on the debates, the students' preparation for them, as well as their aptitude in them and their ability to gauge the quality of presented arguments.

The course aims to help the students develop several academic skills: researching a given question, formulating arguments, judging sources, team work, etc. This class is not only about debates but it is a debate class, and therefore the crucial skill set it focuses on is connected to public debate.

Astronomy involves the heart as well as the mind: it involves the entire human being, scientific observations and measurements, theories and discoveries, but also aesthetics and symbolism, socialization and alienation, values and virtues, psychology and politics. Each of the debates will be eminently interdisciplinary. This diversity will be incorporated into the design of ASTR204 and regarded as an asset ([read more](#)). **Peer instruction** will therefore be a major part of the course.

The course aims to be student centered. This is reflected in the weight given to student interaction, and to peer instruction. Instead of trying to mold the student into a preconceived ideal, ASTR204 aims to build on the resources each student already possesses.

Course Syllabus: Your Roadmap to ASTR 204

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 the teacher and the students.

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Meet Your Teacher



Instructor: Pavol "Paul" Gabor, S.J., Ph.D.
Email: pgabor@arizona.edu
Office: Steward Observatory, Room N209B
Phone (office): (520) 621-6043
Skype: paul.gabor
Bio: <http://www.paignion.info>

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

Office Hours

Wednesday 11:00 am – 12:00 pm
Friday 2:00 pm – 3:00 pm

You can also set up an appointment at other times.
There are no stupid questions. Please do not hesitate to ask. ☺

Meet Your Teaching Assistant



TA: Michelle Wilson
Email: mwilson5@email.arizona.edu
Office: Steward Observatory, Room 352
Phone (office): (520) 621-7093
Bio: [graduate students' page](#)

Ms Wilson will respond to your emails within 24 hrs, Mon-Fri.

Office Hours

Monday 11:00 am – 12:00 pm
Tuesday 3:30 pm – 4:30 pm

You can also set up an appointment at other times.
There are no stupid questions. Please do not hesitate to ask. ☺

Interdisciplinary Synergy

Astronomy has a history that reaches back into the time before historical record. Unlike most other hard sciences, it often makes breaking headlines in the popular media. It could be merely marketing: Astronomers have pretty pictures to offer the journalists, whereas solid-state physicists do not. But it also could be that astronomy studies issues which touch upon our imagination in a very profound way: the depths of time and the extent of space, the origins of the Universe, extraterrestrial life, cosmic collisions, black holes and supernovae, space exploration, etc. The question is what is there about these issues that makes them interesting and exciting even to people whose knowledge of science is very limited?

This is why a class on the history and philosophy of astronomy, attended by students with a broad range of backgrounds and interests, can become a laboratory. Obviously, we will learn about the history of astronomy. We will learn that historians of astronomy presented their "histories of astronomy" very differently, depending on their philosophical leanings. We will study astronomy's impact on how we see the world and our place in it. But we will also see that one event interests different students in different ways. Regarding Galileo, an Italian major might be fascinated by his correspondence with his daughter, whereas an optics major might try to build a replica of Galileo's telescope.

The diversity of backgrounds represented by the student body could be regarded as a challenge. In this course, instead of trying to make all students approach the subject matter the same way, we will use the diversity of approaches as a resource: making the participants aware of the cultural diversity and of the communication issues which it represents, as well as showing the legitimacy of the various approaches and their contribution. This is why on-line debates and in-class interaction will be a major part of the course.

Your Learning Community

Interaction with fellow students

The [previous section](#) explains the reasons why interaction with your peers, including on-line discussions, is particularly important in this class.

Etiquette

Everyone in the class is expected to abide by and follow the UA's [Student Code of Conduct](#). Eating and drinking is not permitted in class (unless the teacher gives you special permission). Unless otherwise stipulated by the teacher, talking is strictly prohibited with the notable exception of asking questions of the teacher. Cell phones and similar devices must remain in quiet mode. Texting is only acceptable if allowed by the teacher. If you use a computer in class, make sure it does not create a nuisance

(various acoustic signals, images and animations that draw undue attention) and please refrain from loud typing. Analogous guidelines apply to the use of printed materials.

Correct conduct includes general rules of netiquette, being polite in online discussions, no flaming/teasing, no swearing/cursing, and being mindful and tolerant that everyone has their own personal belief system and is due full respect.

Please review: <http://www.albion.com/netiquette/corerules.html>

Please review the UA Student Code of Conduct:

<http://deanofstudents.arizona.edu/policiesandcodes/studentcodeofconduct>

Questions

Students are encouraged to ask questions. The teacher is available during class, after class, by e-mail, during office hours, and by appointment. Asking questions during class is particularly useful:

- Your fellow students will be grateful to you not only for making the teacher explain better or more in depth, but also for the diversity of backgrounds and approaches manifested by your questions.
- Your teacher will be grateful to you for the stimulus as well as for the instant feedback a query represents.

There are no stupid questions!

Attendance & Participation

Attendance & Participation in class are important for your understanding of the course material and of the diversity represented by your fellow students. Students who are regularly absent will be [Administratively Dropped](#) from the course.

The main guideline is: communicate. If you know of your absence beforehand, tell the teacher. If your reasons are personal, let the Dean of Students staff provide you with a note to your teachers so that you do not have to explain your reasons more than once. Then, forward the note to your teacher.

Course Format

The semester comprises six debate units, each representing five class sessions. The first session of each unit is primarily the presentation of the topic by the teacher. During the second, and third sessions the focus shifts gradually from teacher input to student activity in preparation for the debate which takes place during the fourth session. The fifth session is about feedback, sharing, debriefing and evaluating the debate.

There are no tests, no exams and no papers outside of the five-session units.

For each unit, the class is divided differently into three sections:

Thesis Team	4 students
Antithesis Team	4 students
Synthesis Section	rest of the class

Assignment to these sections is done randomly.

The Thesis Team as well as the Antithesis Team are required to work as groups, organizing their team effort, and sharing the workload. The Synthesis Section comprises the rest of the class. Each student in the Synthesis Section is required to work independently.

The main activity of the Thesis and Antithesis Teams is the debate, while the main activity of the Synthesis Section is the evaluation of the debate. Both types of activity require careful preparation for the debate, active and/or attentive participation in the debate, and feedback after the debate.

Course Schedule

See the d2l "[Calendar](#)" tool (remember to set "Display Options" >> "Course Events" appropriately). For a draft printout, see the attached sheet. The schedule is likely to require adjustments: the priority is to cater to student requirements, not to adhere to a preconceived program.

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, 70 to 80% at least a C.

The overall grade is determined as the median of the grades for the six units.

The grade for students in the Synthesis Section is composed of the following elements:

90%	Teacher evaluation of:	
	30%	how the student prepared his/her evaluation grid
	70%	the evaluations written by each student in the Synthesis Section for each member of the (Anti)Thesis groups
10%	Peer evaluation by the (Anti)Thesis Teams, focusing on how helpful the written feedback from the Synthesis Section members was to them.	

The grade for the members of the Thesis and Antithesis Teams comprises individual (75%) and group (25%) elements:

75%	Individual contribution	
	25%	Teacher evaluation of the preparatory work before the debate
	35%	Teacher evaluation of the individual performance in the debate
	40%	Peer evaluation of the individual performance in the debate as a median of the points awarded by the students in the Synthesis Section
25%	Group contribution	
	50%	Teacher evaluation of the group performance in the debate
	50%	Peer evaluation of the group performance in the debate as a median of the points awarded by the students in the Synthesis Section
Each member of the (Anti)Thesis Team evaluates his/her team mates. This evaluation is then used to weight the group contribution.		

Academic Honesty

Presentation of any work other than your own is considered academic dishonesty. This includes copying test answers or homework assignments, other persons taking exams for you, or reference to any unauthorized materials during the exam. Any other technique that gains unfair advantage over other students is also considered academically dishonest. All students must be prepared to present valid picture identification if requested during an exam period. Any incidents of academic dishonesty will be dealt with according to the University of Arizona's Code of Academic Integrity. A copy of this Code can be obtained at the Dean of Students website. The consequences can range from loss of credit on an assignment to dismissal from the University, depending on the severity of the offense. The penalty for plagiarism, cheating on an exam, computer fraud, or using another student's responder to falsify attendance will be automatic failure of the course, and depending on the circumstances, may lead to your suspension or expulsion.

You can find details of the Code at:

<http://deanofstudents.arizona.edu/codeofacademicintegrity>

You should also be aware of the University's policies on disruptive and threatening behavior:

<http://deanofstudents.arizona.edu/disruptiveandthreateningstudents>

TurnItIn.com

If you decide to take and continue in this course, you are agreeing to submit your papers online, when so instructed, to a plagiarism-prevention program called TurnItIn.com. You should note that TurnItIn.com – always without your name and any personal information – will retain your paper as part of their database so that students who plagiarize from it can be detected. Because of this program, the vast majority of you who do your own work and cite your sources of information properly will not have to compete with students who commit undetected plagiarism. Anyone who has questions or problems with TurnItIn.com may talk privately about these with the teacher.

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.

Makeup Tests

No makeup tests, WITH NO EXCEPTIONS, will be administered.

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.

Course Prerequisites

- *Content knowledge*
There are no concrete prior requirements although a certain level of proficiency in academic work is expected in order to contribute to the group projects (see examples – d2l link).
- *IT requirements*
Some elements of the course (e.g., reading quizzes will be administered on-line) require access to D2L.
Various web-enabled tools are used in this course. You should be comfortable using a web browser, clicking links to navigate online, using a search tool, downloading and opening files, and participating in live lecture sessions. Additionally, you will be asked to use a word

processing program to complete homework. There may be videos and podcasts in this course as well as interactive activities where you play with the content/questions/animations online.

If you have technology trouble during the course please visit the OSCR Help Desk:

<http://uits.arizona.edu/departments/the247>

Course Materials

There is no required textbook for this course. Material will be made available through D2L.

Once you register in ASTR204 you will see the course show up under your Student Tab. This is our class home – it will be the place you check for announcements, assignments, discussions, grades – course material will be linked to from D2L. It is where you go to know what to do.

Technical/Computing Support

The University has multiple resources available for students to get technology and computer help when things go wrong or you need direction to get started.

D2L Help: <http://help.d2l.arizona.edu/>

University Information and Technology Services: <http://www.uits.arizona.edu/>

UA NetID: <https://netid.arizona.edu/>

CatMail: <http://www.uits.arizona.edu/services/catmail>

UAccess Student: <http://uaccess.arizona.edu/>

Official Policies and Procedures

The following sections are University of Arizona Board of Regents policies and procedures that will be adhered to in this course. Please review the Code of Academic Integrity, Student Code of Conduct, and the Non-Discrimination & Anti-Harassment Policy. Any and all interactions between students, instructors, teaching staff, and course managers – everyone involved in this course – will follow these policies. If you witness a violation of a policy or are a victim of a policy violation, please report it appropriately with the default/information source to be the Dean of Students Office at the UA-Tucson campus.

Code of Academic Integrity

The UA Code of Academic Integrity prohibits all forms of academic dishonesty, including cheating, plagiarism, and fabrication; all students should be familiar with it and follow it in this class. The Code also informs faculty, teaching staff, and students on the procedures and due process for violations of the Code. Please review the full Code of Academic Integrity here:

<http://deanofstudents.arizona.edu/codeofacademicintegrity>

Tips for avoiding Academic Dishonesty:

<http://deanofstudents.arizona.edu/tipsforavoidingacademicdishonesty>

Student Code of Conduct Philosophy

The aim of education is the intellectual, personal, social, and ethical development of the individual. The educational process is ideally conducted in an environment that encourages reasoned discourse, intellectual honesty, openness to constructive change, and respect for the rights of all individuals. Self-discipline and a respect for the rights of others in the university community are

necessary for the fulfillment of such goals. The Student Code of Conduct is designed to promote this environment at each of the state universities.

The Student Code of Conduct sets forth the standards of conduct expected of students who choose to join the university community.

Students who violate these standards will be subject to disciplinary sanctions in order to promote their own personal development, to protect the university community, and to maintain order and stability on campus.

Find the full Student Code of Conduct here:

<http://deanofstudents.arizona.edu/policiesandcodes/studentcodeofconduct>

Non-Discrimination and Anti-Harassment Policy

The University of Arizona is committed to creating and maintaining an environment free of discrimination, harassment, and retaliation that is unlawful or prohibited by University policy. The University prohibits discrimination, including harassment and retaliation, by University employees, students, contractors, or agents of the University and by anyone participating in a University sponsored activity against an individual based on a protected classification. Protected classification includes race, color, religion, sex, national origin, age, disability, veteran status, sexual orientation, gender identity, or other protected category. The University also prohibits retaliation because an individual has engaged in a protected activity.

The University will take prompt and appropriate action to: (1) thoroughly investigate complaints under this policy; and (2) prevent, correct and, if necessary, discipline individuals who engage in behavior that violates this policy in accordance with University policies. All members of the University community are responsible for participating in creating a campus environment free from all forms of prohibited discrimination and for cooperating with University officials who investigate allegations of policy violations.

See the full policy here: http://equity.arizona.edu/non-discrimination_anti-harassment

Disabilities

Disability is an aspect of diversity that is integral to our society and to the University of Arizona campus community. If you anticipate barriers related to the format or requirements of this course, please meet with me so that we can discuss ways to ensure your full participation in the course. If you determine that disability-related accommodations are necessary, please register with Disability Resources (621-3268; drc.arizona.edu) and notify the teacher of your eligibility for reasonable accommodations. We can then plan how best to coordinate your accommodations.

University Resources

Even though you are an online student, you are still a student of the University of Arizona and a member of the UA community. Even at a distance you may need help and assistance so please do not hesitate to contact on-campus departments. Here is a list you may find helpful:

Dean of Students: <http://deanofstudents.arizona.edu/>

Campus Health: <http://www.health.arizona.edu/>

Counseling and Psychological Services: <http://www.health.arizona.edu/caps.htm>

Office of Instruction and Assessment: <http://oia.arizona.edu/>

University Information Technology Services: <http://www.uits.arizona.edu/>

LGBTQ Affairs: <http://deanofstudents.arizona.edu/LGBTQaffairs/home>

UA Parents and Family Programs: <http://uafamily.arizona.edu/>

Student Advocacy and Assistance:

<http://deanofstudents.arizona.edu/studentassistanceandadvocacy>

Women's Resource Center: <http://wrc.arizona.edu/>

Date	Title	Description
Thu 10 Jan 1.1	End of the World!!! (?)	Introduction to the class and to the first topic.
Tue 15 Jan 1.2		Preparing for the debate.
Thu 17 Jan 1.3		Preparing for the debate.
Tue 22 Jan 1.4		Debate.
Thu 24 Jan 1.5		Sharing, Debriefing, Evaluation.
Tue 29 Jan 2.1	The Arrow (N. Oresme)	Introduction to the second topic.
Thu 31 Jan 2.2		Preparing for the debate.
Tue 05 Feb 2.3		Preparing for the debate.
Thu 07 Feb 2.4		Debate.
Tue 12 Feb 2.5		Sharing, Debriefing, Evaluation.
Thu 14 Feb 3.1	Galileo: Sun's motion(s)	Introduction to the third topic.
Tue 19 Feb 3.2		Preparing for the debate.
Thu 21 Feb 3.3		Preparing for the debate.
Tue 26 Feb 3.4		Debate.
Thu 28 Feb 3.5		Sharing, Debriefing, Evaluation.
Tue 05 Mar 4.1	UFOs	Introduction to the fourth topic.
Thu 07 Mar 4.2		Preparing for the debate.
Tue 19 Mar 4.3		Preparing for the debate.
Thu 21 Mar 4.4		Debate.
Tue 26 Mar 4.5		Sharing, Debriefing, Evaluation.
Thu 28 Mar 5.1	Extraterrestrial Life Debate	Introduction to the fifth topic.
Tue 02 Apr 5.2		Preparing for the debate.
Thu 04 Apr 5.3		Preparing for the debate.
Tue 09 Apr 5.4		Debate.
Thu 11 Apr 5.5		Sharing, Debriefing, Evaluation.
Tue 16 Apr 6.1	Expanding Universe	Introduction to the sixth topic.
Thu 18 Apr 6.2		Preparing for the debate.
Tue 23 Apr 6.3		Preparing for the debate.
Thu 25 Apr 6.4		Debate.
Tue 30 Apr 6.5		Sharing, Debriefing, Evaluation.
Thu 02 May		Reading day
Tue 07 May	Final Test	Final Exam: Tues. May 7 (or Thur. May 9)

