

Astronomy 201, Winter 2015

STARS AND GALAXIES

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Classes: Tu. & Th., 2-3 pm, Con. Hall
ast201@astro.utoronto.ca

Course Description and Prerequisites

AST 201 is one of two general-interest courses in astronomy taught at the University of Toronto. This course deals with the universe beyond our solar system, including the lives and deaths of stars, black holes, galaxies, the Big Bang, dark matter, and dark energy. The complementary course, AST 101, deals with our solar system, newly-discovered planets in other solar systems, and the search for life in the cosmos.

The course is largely *non-mathematical*, but there will be some math shown in the lectures. If you're uncomfortable with math, you should read the Study Guide (posted on Portal) to get a clear idea of what will be expected of you.

This course is intended for students with no science or engineering background. AST 201 cannot be taken for credit by those who are taking or have previously taken AST 221H, Civil 101H, or any 100-level or higher-series Chemistry or Physics courses (with the exception of PHY 100H and CHM 200Y). If you are unsure whether you can take AST 201 for credit, consult Lillian Lanca (lanca@astro.utoronto.ca) in the main astronomy office.

Course Learning Goals

My hope is that you will see AST 201 as an opportunity to indulge your curiosity about the universe you live in. You should **enjoy** taking this course. We will cover some essential topics, but we will make every effort to leave time for questions, which are strongly encouraged! Our overall goals in this course are:

- to discover our place in the universe
- discover *what* the universe is like and *why* it is like that
- to develop our capacity to ask and answer important questions about science
- to learn how to think critically about concepts in astronomy, physics, and space science

E-mail

Please post all science questions, general inquiries, and any other material for which privacy is not a concern to the discussion boards on Portal. For efficiency, these types of questions **will not be answered by e-mail**. For matters where privacy is a concern, please e-mail:

ast201@astro.utoronto.ca

Please do not e-mail the professors or your TAs at their individual accounts. We will not reply at those addresses.

Course Materials

All of the following may be obtained through the university Bookstore.

- Required Text: The Cosmic Perspective, 7th ed., by Bennett et al. (6th edition is also acceptable)
- an i>clicker unit or a license for i>clicker GO (see Clicker Quizzes section below for details)
- an access code for Mastering Astronomy. It comes with new copies of the book or, if you bought a used book, you can buy the code separately from cashiers in the UofT Bookstore in Koffler Centre. **Accounts purchased in previous semesters WILL NOT WORK.** You must buy a new code at the special one-semester price available only to this class.

Tutorials and Planetarium Shows

This course has mandatory weekly tutorials. Consult the “Term Schedule and Reading List” on Portal to ensure that you go to the correct room each week.

Grading Scheme

Clicker quizzes in lectures	6%
Clicker quizzes in tutorials	6%
Mastering Astronomy assignments (approx. 10-11 of these)	5%
Term Project	8%
Midterm test	25% or 35%
Final exam	50% or 40%

If your midterm grade is higher than your grade on the final exam, your midterm will count for 35% of your final grade and the exam for 40%. Otherwise, the midterm will count for 25% and the final for 50%. We will automatically drop your lowest TWO assignment marks, including zeroes. You do not need to submit medical or other documentation for this to occur.

NEW THIS SEMESTER: your clicker grades will be calculated cumulatively over the whole semester, not class-by-class or tutorial-by-tutorial. To get the full 6% for either of your clicker grades, you need to participate in and correctly answer 85% of the clicker quizzes. You get one mark for participating in a quiz and one mark for getting the answer correct. So, for example, if there were 50 lecture clicker quizzes over the whole semester, that means there would be 100 possible lecture clicker marks. If you earn 85 of them, you get the whole 6% for your lecture clicker grade. If you earn less than 85 marks, we’d give you whatever fraction of the 6% you had earned. For example, if you earned 70 of the 85 possible marks, we’d give you $70/85 = 82.4\%$ of the marks, or 4.94% out of a possible 6%. This policy should reduce your anxiety about missing a few questions here or there. You can leave class to go to the bathroom and not worry about missing a quiz.

For this reason, we will not be making ANY accommodations for missed clicker quizzes unless the total duration of the absence exceeds two weeks and medical or other appropriate documentation is submitted. Reasonable absences are assumed to be accounted for by this clicker grading policy.

If you earn more than 85% of the available marks for one portion of your clicker grade, those additional marks will count as a bonus that can offset a lower grade on your other clicker grade (e.g. bonus marks on the lecture clicker grade can raise the tutorial clicker grade).

Portal/Blackboard

All students are responsible for **daily monitoring** of the course Portal page at:

portal.utoronto.ca

All important announcements will be posted on Portal. It is your responsibility to check for them. Lecture notes and grades will also be posted on Portal. If you can't access the Portal page for this course, please refer to these troubleshooting instructions: <http://www.portalinfo.utoronto.ca/content/information-students>

Clicker Quizzes

Clicker quizzes will be administered several times each class and tutorial. These are open-book exercises designed to help you test your understanding as you learn and improve your retention. Clicker quizzes are not tests: you are encouraged to discuss each quiz with your classmates and refer to your notes. To make them less intimidating, you can earn two marks per quiz: one for clicking ANY answer and one more if your answer is correct.

CLICKING IN ON ANY CLICKER BUT YOUR OWN, EVEN ONCE, OR ASKING SOMEONE TO CLICK IN ON YOUR CLICKER, EVEN ONCE, CONSTITUTES A SERIOUS ACADEMIC OFFENSE. THE PENALTY FOR THIS OFFENSE MAY INCLUDE THE LOSS OF ALL CLICKER MARKS IN BOTH LECTURE AND TUTORIAL FOR THE ENTIRE TERM.

You have two options for purchasing an iClicker:

1. Purchase a hardware iClicker+ (either new or used) from the UofT Bookstore.
2. Purchase a one-semester license to use the iClicker GO app on your smartphone, tablet, or laptop.

The hardware iClicker+ units (option 1) are known to work well in Convocation Hall. Students have had very mixed experiences with iClicker GO. Whether it works reliably for you will depend on your level of technological aptitude and your device's ability to maintain a good wireless connection. **If you want to use iClicker GO, we STRONGLY RECOMMEND that you use the free trial version for at least one class to ensure that your device is able to access the service reliably using whatever mobile internet connection you choose.** Marks earned with the trial version of iClicker GO will be kept if you choose to upgrade to the full version. If you find that you are unable to access an internet connection reliably in Convocation Hall, we recommend you purchase an iClicker+ device, which should 'just work'. We will not make special accommodations if you miss clicker quizzes due to problems with your own mobile device, such as a depleted battery or difficulty accessing the campus wireless network. These issues are assumed to be accounted for by the flexible clicker grading scheme. (see "Grading Scheme" above).

When registering for an iClicker GO account, you will be asked for your school's postal code. Use M5S1A1

Please also note that, if you use a hardware iClicker+, you will need to be careful to change your clicker frequency during tutorials, or you will not earn marks. Your tutorial TA can tell you how to do this. **IF YOU ARE SEEING A RED LIGHT ON YOUR CLICKER WHEN YOU CLICK IN, YOUR**

MARKS ARE NOT BEING RECORDED. Try clicking in again. If that doesn't work, bring the problem to the attention of your instructor or TA *immediately*.

If you are unable to obtain a clicker for some reason, please speak to Dr. Reid as soon as possible. If you wait, you may irretrievably lose clicker marks.

Registering your Clicker

Whether you have an iClicker or iClicker GO, you **MUST** register it ON PORTAL, not on some other web site. To do so, follow these instructions:

1. iClicker: Locate the remote ID code below the bar code on the back of your clicker (or inside the battery compartment). Enter this code on Portal under "Register Your Clicker".
2. iClicker GO: Log into your iClicker GO account and access the "Account" page. Locate your i>clicker GO ID and enter the whole number into the box on the "Register Your Clicker" page on Portal.

Illnesses, Absences, and Medical Notes

The Grading Scheme section lists the marks we will drop for every student. You **do not** need to submit documentation for absences up to this default allowed limit. For longer absences, please submit appropriate documentation to one of the professors after class or during office hours. Any documentation you submit will be counted against the default allowed absences first (meaning that documentation for three missed assignments will excuse you from only three assignments, not five).

If you are absent from a midterm, you MUST notify us as soon as possible at ast201@astro.utoronto.ca, preferably by e-mail on the day of your absence. If you do so promptly, you may be allowed to write a make-up test. If you feel ill prior to a test and you think your illness will impair your test performance, **DO NOT WRITE THE TEST. Under NO CIRCUMSTANCES will students be allowed to re-write tests.** Absences for religious observances normally require three weeks' notice.

Assignments

In this course, assignments will be completed online using the Mastering Astronomy web site. Full instructions on how to purchase an access code and register for the system can be found on the Portal site for this course, on the 'Assignments' page. **For this course only, we use a special version of Mastering Astronomy available to you only through the UofT Bookstore at a discounted price.**

New assignments will be posted on Wednesdays and will be due the following Tuesday at 5:00 p.m. ***It is your responsibility to monitor the Mastering Astronomy web site and ensure that you complete all of the assignments by their posted due dates.***

Although you are free to discuss the assignments with each other in general terms, any evidence of copying or other forms of academic dishonesty will be treated very seriously. If we find that you have cheated on even one assignment, the penalty might include losing all of the assignment marks for the entire semester.

If you are unable to obtain a Mastering code for some reason, please speak to Dr. Reid as soon as possible. If you wait, you may irretrievably lose assignment marks.

Examinable Material

The examinable materials for this course will consist of the materials covered in lectures and tutorials, assignments, and the assigned readings. Portions of the text not covered in class are not examinable.

Grade Checks and Disputes

You are encouraged to review your graded materials to ensure that they have been graded accurately and the marks added correctly. After the midterm, we will have Grade Check Session during which you will have the opportunity to meet with the grading TAs and discuss your marks. **Midterms and final exams can only be remarked if they were originally written in non-erasable pen.**

Observing Nights

Over the course of the term, we will hold several optional observing sessions which will afford students the opportunity to view highlights of the night sky through a telescope. These will necessarily be scheduled as the weather permits. Announcements about these sessions will be made in class, on Portal, and by e-mail. No marks are awarded for participating in these activities—they're just for fun. You may attend more than one session, space permitting, and may bring one or two friends to each one.

Because these sessions will usually take place after dark on the downtown campus, all students are strongly encouraged to take appropriate safety precautions when traveling to and from the sessions. Dress warmly—it can be cold and windy 15 floors up!

Observing sessions will sometimes be canceled due to inclement weather or cloud cover—being at the mercy of the weather is part of being an astronomer! If an observing night has to be canceled, a note announcing the cancellation will be posted on Portal by 3 PM on the day of the observing night.

Accessibility

The University of Toronto offers a wide variety of services to ensure that all students have equal access to education. Most of these services are coordinated through Accessibility Services. See:

<http://www.accessibility.utoronto.ca/>

If you have (or develop) any kind of physical, mental, or emotional condition that might interfere with your schoolwork, we strongly encourage you to register with Accessibility Services as early as possible. Examples of such conditions include learning disabilities, concussions, chronic health issues, mobility issues, low vision, anxiety, and depression. Accessibility Services will assess your needs and work on your behalf to arrange accommodations with your professors so that you can achieve at your optimum potential.

If you have a mobility issue that prevents you from going up or down stairs, please let us know as early in the semester as possible. The planetarium, the observatory, and Dr. Reid's office are all accessible by stairs only. We will happily arrange assistance or alternatives for those who might have difficulty accessing these locations.

Academic Integrity

From *Appendix D* of the *Academic Integrity Handbook*

Academic integrity is one of the cornerstones of the University of Toronto. It is critically important both to maintain our community which honours the values of honesty, trust, respect, fairness, and responsibility and to protect you, the students within this community, and the value of the degree towards which you are all working so diligently.

According to Section B of the University of Toronto's *Code of Behaviour on Academic Matters* (<http://www.artsci.utoronto.ca/osai/students>) which all students are expected to read and by which they are expected to abide, it is an offence for students to:

- Use someone else's ideas or words in their own work without acknowledging **explicitly** with a citation that those ideas/words are not their own with a citation and quotation marks, i.e. to commit plagiarism. In particular, to copy answers to short answer assignment problems from any website, the textbook, another student, or any other source, even if re-worded.
- **Click in on any clicker other than their own**
- **Ask another student to click in on a clicker other than his or her own**
- Include false, misleading, or concocted citations in their work.
- Obtain unauthorized assistance on any assignment
- Provide unauthorized assistance to another students. This includes showing another student your own work or clicking in on their iClicker.
- Submit their own work for credit in more than one course without the permission of the instructor.

There are other offences covered under the Code, but these are the most common. You are instructed to respect these rules and the values which they protect.

VERY IMPORTANT TO-DO ITEMS

1. Bring your iClicker with you to every class starting on the second lecture.
2. Log into the course on Portal. If you can't access the course and you have registered recently, please wait up to 48 hours for your registration to take effect. Your professors cannot speed this process along.
3. Register your clicker **ON PORTAL**. Everyone must complete this step, even if you've registered your clicker before.
4. Sign up for a tutorial section on ROSI if you have not already done so.
5. Make sure your e-mail address on ROSI is a @utoronto.ca address or you may miss crucial e-mails.
6. Sign up for Mastering Astronomy following the instructions on the 'Assignment' page of the course Portal site.
7. Complete the assignments “Introduction to Mastering Astronomy” (not for marks) and “Assignment 1” (for marks) on Mastering Astronomy.
8. Read the university's policies on academic honesty and integrity:

<http://www.artsci.utoronto.ca/osai/students>

as well as the university's Code of Student Conduct

<http://www.governingcouncil.utoronto.ca/policies/studentc.htm>