

Lecture Syllabus for **AST 101IN, AST 102IN, AST 105IN**

[Turn to page 5 for the Lab portion of the syllabus.]

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AST 101IN Solar System	AST 102IN Stars, Galaxies, Universe	AST 105IN Life in the Universe
Textbook: <u>Foundations of Astronomy</u>, 9th edition, 2007, by Dr. Michael Seeds	Textbook: <u>Foundations of Astronomy</u>, 9th edition, 2007, by Dr. Michael Seeds	Textbook: <u>Life in the Universe</u>, 2nd edition, 2007, by Bennet & Shostak
Note Set: <i>Introductory Notes for AST 101IN, AST 102IN, AST 105IN</i>	Note Set: <i>Introductory Notes for AST 101IN, AST 102IN, AST 105IN</i>	Note Set: <i>Introductory Notes for AST 101IN, AST 102IN, AST 105IN</i>
Note Set: <i>The Scientific Revolution and Western Civilization</i> for AST 101IN	AST 102IN Classroom Note Set	AST 105IN Classroom Note Set
AST 101IN Classroom Note Set	LSW lab packet (plastic bagged); note that top lab is #21	<i>Life in the Universe Activities Manual</i>, 2nd edition, 2007, Prather <i>et al</i>
LSW lab packet (plastic bagged); note that top lab is #1		
Stapled lab packet; top lab is "Angular Measurement and You"		

ATTENDANCE:

Central to your success in this (and most any) course is daily attendance. Not only is the course content imparted of value, but also announcements relating to the course. Attendance is taken daily. (See comments in "Incentive Score" on page 3 and "Attendance Scoring" page 4.) NOTE: With the lecture/lab integrated mode of this course, your absence will may cause you to lose points by not being present to participate in lab activities. NOTE also: If I notice 3 or more absences in a row in the attendance record, I may withdraw you from the course, unless you contact me to clarify. Sometimes for unavoidable reasons a student may miss a class and feels put upon by not receiving attendance credit. I recognize those situations by automatically giving all students 3 full-period grace absences. This score is a record of your attendance. If you weren't there, you don't get the credit for being there, irrespective of reason for absence. I want to reinforce, and take note of, your attendance, which is important for your learning success in this course. I have no desire to act as judge on your reason(s) for absence.

HOMEWORK: Important, too, for your understanding is the reading of assigned material (almost entirely from the textbook) and the answering of questions at the end of each chapter. The purposes of this written homework is to help you to think about the chapter material you've just read and, along with attendance sign-in sheets, document your continuing efforts. Your answers will be spot checked and score recorded. Try to work independently; poor answers copied mindlessly may be given extra penalty. See "Grading" Section, "Incentive Score".

Late policy: The course load for you and me can tend to build up and it is important for all of us to see that work is turned in on the due date. On the other hand, I realize events beyond the student's control may on rare occasion prevent an assignment from being handed in on time. I therefore will accept with no penalty homework handed in anytime on the due date. If you cannot hand the assignment in until after class time, you need to hand it into the STEM Division Office (ME 255, open area on 2nd floor of Tortalita) where they will stamp it and place it in my mailbox. A small, but growing, late penalty of 2 pts @ school day (Mon—Fri, except holidays) will be assessed until the assignment is handed in or the penalty grows equal to the maximum possible score. This penalty applies even if just part of the homework is handed in late, though at a reduced rate. **NB:** If you cannot be in class on the due date, then you have options to mail, e-mail, or fax me (206-6902) the assignment. I will go by the envelope post date (or e-mail or fax date) to determine the late penalty, if any. **This is a reasonable and flexible policy. Do not ask for favors because you have already been given favor automatically.**

My mailing address: See page 8 (last page).

TESTING: There will be four tests in each course covering the lecture material. Any lab material to be tested upon will be made explicitly clear to you that it goes on your lab score. The tests will tend to emphasize the material presented in class, but the book remains important to you in your test preparation. See "Grading" Section, "Tests," on p. 3.

There is also a comprehensive (covering the entire course material) FINAL EXAM. IT IS USED ONLY AS A MAKE-UP FOR A MISSED TEST. Its use will affect the weighting of the individual tests. (See "Grading" Section, "Final Exam".) A second missed test receives an automatic zero. The Final Exam is not an optional replacement for your lowest test score.

INCENTIVE SCORE: This score is compiled from credit you earn in several ways—through attendance, homework, and outside activities. See "Grading" Section, "Incentive Score" on page 3.

OUTSIDE ACTIVITY (OA) CREDIT

Astronomy is a subject that can be approached in a variety of ways. And because we live in what is sometimes referred to as the "Astronomy Capital of the World", we should take advantage of some special opportunities here. Each Outside Activity you do can account for up to about 15%, depending on the event, towards your Incentive Score. (See "Grading" (page 3), "Incentive Score".) You have your choice from the list below:

FLANDRAU PLANETARIUM — For program information, call 621-STAR. Hand in a brief (350-600 word) description of the public program for 8-12% OA credit. NO credit for laser-music shows. <http://www.flandrau.org/>

KITT PEAK NATIONAL OBSERVATORY — Small donation. (318-8726) Take the guided tour on weekends at 10:00 a.m., 11:30 a.m., or 1:30 p.m. Document your visit by having the tour guide sign, stamp, and date a Kitt Peak brochure following the tour. The docents are instructed not to sign a brochure for anyone who has not participated in their tour. Be sure to sign your name too. No report is required. Your visit is worth 10% OA credit, less if you do not do all required. www.noao.edu/outreach/kpvc

MAGAZINE ARTICLE LIST — Enlightening articles are offered you in a Magazine Articles List, handed out near the start of the semester. I prefer you do a structured outline. Summarizing or listing significant points will earn you less credit than outlining. Do not outline articles not found in the list before checking with me.

TUCSON AMATEUR ASTRONOMICAL ASSOCIATION (TAAA) — Monthly meetings in the new auditorium (room N 210) at the U of A's Steward Observatory (933 N. Cherry Ave.) 6:30 p.m. on the first Friday of most months. This is for 8-12% OA credit, with a report as described above for planetarium visits. Check the following Website for scheduled talks: <http://www.tucsonastronomy.org/>

STEWARD OBSERVATORY PUBLIC EVENING SERIES — Monthly meetings in the new auditorium (room N 210) at the U of A's Steward Observatory (933 N. Cherry Ave.) 7:30 p.m. on various Monday evenings during the semester. Check the following Website for schedule: http://viking.as.arizona.edu/~taf/pubeve/pub_lect.html This is for 8-12% OA credit, with a report as described above for planetarium visits and TAAA meetings. For map and link online, see 2nd table at our astronomy classes website <http://wc.pima.edu/~gmechler/>

LUNAR AND PLANETARY LAB (LPL) EVENING LECTURE SERIES — Monthly meetings in the Kuiper Space Sciences Lecture Hall, room 308, 7:30 p.m. on various Tuesday evenings during the semester. Check the following Website for schedule: <http://www.lpl.arizona.edu/COLPL/> This is for 8-12% OA credit, with a report as described above for planetarium visits and TAAA meetings. For map and link online, see 2nd table at our astronomy classes website <http://wc.pima.edu/~gmechler/>

There may be other activities announced thru the term which are acceptable for credit. For example there is usually a short-term lecture series or just individual talks that can be very rewarding by introducing you to the intellectual life. They will be announced in class and on the website.

IMPORTANT: Outside Activity (OA) credit reports etc. may be handed in at any time in the semester, without penalty, up to the end of the last class period (when you take the last test). The class period of the last test marks the end of the course. I refer to this not as a due date, which carries the implication of lateness allowed, but as the Final Deadline for ALL work due or previously due. This is the end of this class'es time. There is no "late" after it, with the exception of an I (Incomplete Grade being awarded, for which I expect you to ask.) I will ignore any work handed in after the class period or emailed to me with a time after the class period. I recommend you earn most of your Outside Activity credit during the first month or two of the course. Save 5-10 to be done near the end to encourage you to take advantage of good talks or planetarium programs offered then. Things pile up near the end of the semester.

Optional Book Report: In addition to the outside activity possibilities listed above, you have the option of going for more credit (extra credit, actually) by reading a book and preparing a book report. All the points earned will go to Outside Activity Credit. See the Grading section next page for more on this. Obtain the Book Report instructions at

http://wc.pima.edu/~gmechler/101_pdf_files/book_report_instructions.pdf

or just go to the home page, select your course in the Book Report cell in the second table on the home page and follow links. The Due Date for the Book Report this semester is Tuesday, November 20

GRADING: The grading scale is as follows:

- A: 90s%
- B: 80s
- C: 70s
- D: 60s
- F: below 60

PHILOSOPHY

The bottom line regarding grades is that it will be determined by your performance. The structure of my grading system has as its purpose to encourage you to strive for excellence. In addition to testing your comprehension ability, this system will also grade you on related success traits: perseverance, initiative, effort, accepting responsibility, and ability to follow instructions. (See "Incentive Score".) The grade you receive at the end of the semester is the grade you will have earned.

It is my hope you will leave this course a better student, more understanding of science, more capable of thinking critically, having a broader perspective on the world, open and yet more skeptical of the many claims you will hear. I assert that these abilities and attitudes gained from an introduction to science will serve you well in meeting the challenges of career and life and will increase your ability and willingness to be a conscious contributor to society. Science is not just for scientists.

LECTURE PORTION of the Course Grade

TESTS: The 4-credit astronomy "IN" courses (lecture-lab integrated) comprises 3 credit-hours for the lecture portion and 1 credit-hour for the lab portion. The four tests together contribute $\frac{2}{3}$ of the lecture portion of the Course Grade or $\frac{1}{2}$ of the Course Grade ($= \frac{2}{3} \times \frac{3}{4}$). When averaging these test scores at the end of the term, your lowest score will be averaged with half-weight. This allows for any reason as to why you might do noticeably poorly on one of your tests.

Weighted Average = sum of the three higher test scores + $\frac{1}{2}$ of the lowest score, sum divided by 3.5 (the sum of the weights).

Weighting is affected if you have to take the Final Exam to make up a missed exam--see "Final Exam" Section below.

INCENTIVE SCORE: The remaining $\frac{1}{3}$ of the lecture portion of your course grade assesses your qualities as a learning-centered student. It is the summation of the following activities:

ACTIVITY	MAXIMUM % VALUE		ACTIVITY	MAXIMUM % VALUE
Attendance	40		Attendance	40
Homework	40	OR, with Book Report:	Homework	40
Outside Activity	20		Outside Activity	30
TOTAL	100%		TOTAL	110%

The points you earn in these activities are simply added to determine your % score for this third of your lecture score. Your effort on Outside Activity credit work is low stress, yet can make or break you at the end of the semester.

To give a grading example for the lecture portion of the course, let's take a student whose Incentive Score of 96% results from her Attendance Score of 35% added to her Homework Score of 36%, and to her Outside Activity Score of 25%. Her four tests average 67%, holding the threat of a "D" average. The lecture portion of her Course Grade, however, is $(\frac{2}{3} \times 67) + (\frac{1}{3} \times 96) = 77\%$. There is more to her grade than the lecture portion and that brings us to the next section.

LAB PORTION of the Course Grade

As 1 credit of this 4-credit course, it is worth 25% of your course grade. will be determined from the exercises and activities. It is more straightforward to calculate. It involves no tests, but perhaps a quiz or two. The lowest individual score is dropped at the end of the semester. Your lowest score is the one in which you lost the most points. The lab portion of your grade is simply the sum of the points you earned divided by the maximum possible points (after dropping out that worst score to cut you some slack). And that allows me to conclude my grading example by showing you how your Course Grade results from your lecture and lab grades.

COURSE GRADE

Your Course Grade is the result of adding your lecture and lab portions, weighted by their credit-hour portions. So, for the hypothetical student above, with a 77% lecture score, her lecture contribution to her Course Grade is $\frac{2}{3} \times 77$. Her lab portion score results from first dropping her worst effort, an exercise score of 30 points for which she earned only 18. 18 is therefore subtracted from the points she earned while 30 are subtracted from the maximum possible points, resulting in her lab score being $305 \div 332 = 92\%$. Adding the lecture and lab scores together, weighted by their portion of the 4 credits, her Course Grade results in the following calculation: $(\frac{3}{4} \times 77) + (\frac{1}{4} \times 92) = 80\%$ for a Course Grade of B (barely!).

SYLLABUS for the Lab portion of your integrated astronomy course

Materials needed from the book store: See first page.

A number of lab exercises and activities will be done during the semester. Some will be written exercises involving quantitative skills such as computations, measurements and accurate drawings. **We make the general recommendation that students have completed Math 92, Elementary (first-year) Algebra, before taking these astronomy courses.** This especially pertains to AST 102IN, which has more math, at least in the first half of the course. The written exercises are for the most part completed within the scheduled lab time. These exercises may be done with one, possibly two at my discretion, lab partners. You may well lose further points when I see similar labs for more than two students who still come

up with an egregiously poor answer. If the two of you can't figure out a desired answer, then see me. If you miss some in-class lab work, note that some work can be completed outside of class. It doesn't hurt to check with me to see if missed work can be made up. (But watch those due dates.)

Labs are scored on the basis of completion, timeliness, and accuracy. Accuracy is usually scored on a spot basis. Participation is the primary basis for earning credit for in-class activities. Lab exercise scores are weighted to reflect the differing amount of work involved from lab to lab. Worthy Individual contributions to class are sometimes reward with little ½ point lab credits entered into their grades spreadsheet.

NOTE:

- Some answers are the result of calculations. Even though calculators may be used to carry out the actual calculations, I will expect to see the setups for those calculations. In other words, **on math problems, show me the math.** This is true in both the lab and lecture portions of this course.
- There is often little space in the "LSW" lab exercises. Nevertheless, I need to have **your responses go into the spaces provided.** Problem setups and any related scratch work may be done on separate sheets and handed in with the lab exercise, but remember to **copy your final math result into the space provided.** I won't grade labs in which you fail to do this. I will return the lab to you to copy your final responses in the spaces provided, giving you a new due date, unless it is near the end of the semester, in which case I will grade it, but with a penalty.
- Ensure that you write quantitative answers with their appropriate units.

You can expect that the lab work will help you better understand the concepts introduced in the lecture course as well as foster improved quantitative work skills and habits.

A hand scientific calculator is needed for AST 102IN.

Late Policy: The course load for you and me can tend to build up and it is important for all of us to see that work is turned in on the due date. This is even more true in summer courses. On the other hand, I realize events beyond the student's control may prevent an assignment from being handed in on time. I therefore will accept with no penalty homework handed in anytime on the due date. If you cannot hand the assignment in until after class time, you need to hand it into the Division Secretary's Office on the second floor of the ME building where they will stamp it and place it in my mailbox. A small, but growing, late penalty of 2 pts @ school day (Mon—Fri, except holidays) will be assessed until the assignment is handed in or the penalty grows equal to the maximum possible score. This penalty applies even if just part of the homework is handed in late, though at a reduced rate. **NB: If you cannot be in class on a due date,** then you have option to mail me the assignment. I will credit or penalize, whichever is appropriate, as if you had handed in the assignment on the envelope post date. This is a reasonable and flexible policy. **Do not ask for favors for you have already been given favor with this policy.**

I want you to fill out the appropriate form, which I give you, and sign it. See the Pima College Course Catalog for basic information about the Y and I grades. I will add that you must have completed at least half the assigned lab exercises and in-class activities for me to consider awarding an I grade. Additionally, I need to look at your current grade situation to feel assured that you have a reasonable expectation of completing the course with a C or better. **NB:** If you do not complete the course within one calendar year, your I grade will convert to F.

As with life, you will get out of lab what you put into it.

SPECIAL FURTHER INFORMATION

"ATTENDANCE SCORING"

As indicated on page 4, 40% of your Incentive Score is made by your fulfilling the basic requirement of attending class. Your attendance score will be some proportion of the 40% maximum credit toward your Incentive Score. You will be given three full-period grace absences—bad things happen to the best of students. For example, suppose you miss 6 classes out of 30 classes when attendance was taken. The first three absences are not counted, so the penalty is $(7 - 3) = 4$. The Attendance Score is calculated, in this case, to be $((30 - 4)/30) \times 40\% = 34.7\%$ towards your Incentive Score. Note the "The Most Important Thing" section from the blue *Astronomy Insights* booklet. For those who complete the course, Attendance Scores are good, typically above 35% out of the 40% possible.

"WITHDRAWALS AND INCOMPLETES"

Students may self-initiate withdrawal ("W" grade) from a course only up to $\frac{2}{3}$ into the semester. This semester the self-withdrawal deadline is Monday, April 9. After that, you need to make a request to receive an I grade or W grade. These are granted at my discretion. Note: The Y grade option is no longer in existence as of the end of the Fall 2006 semester.

Completion of the course (earning you A thru F) is defined as taking the 4 required tests, so...

IMPORTANT: If after the Student Withdrawal Deadline, you wish not to complete the course, or you do wish to, but personal circumstances prevent you from doing so, then you may avoid being graded A—F by contacting me about your situation **BEFORE TAKING YOUR LAST EXAM.** Afterward is too late; you have completed the course; I cannot withdraw from a course that is ended. I may then award you a W (Withdrawal) or I (Incomplete) grade, depending upon your specific circumstances. See the Pima College Course Catalog for basic information about the W and I grades. For the I grade I will consider whether you have completed the first two tests and their attendant work and your current grade situation assures me that you have a reasonable expectation of completing the course with a C or better.

Note that I (Incomplete) grades must be completed within one year or the grade automatically converts to an F!

Understand that if you just disappear sometime before the end without withdrawing yourself (before the Withdrawal Deadline) or seeing me about receiving a W or I grade (after the Withdrawal Deadline), I will have no choice but to calculate your Final Grade on the basis of what scores I have recorded in the grade records. In most cases this means you will receive an F.

"FINAL EXAM"

Because the Final Exam is comprehensive (covers entire course), it is given more weight. In this event, with the normal weight equaling 1; the Final Exam's weighting is 2, unless it is the lowest score, which half-weights it weight, simply resulting in a straight average of the tests being taken. Note that the tests altogether will still comprise $\frac{2}{3}$ of the lecture score and $\frac{1}{2}$ of the Course Grade ($= \frac{2}{3} \times \frac{3}{4}$).

For mailing purposes:

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A NOTE FOR THE SOCIALLY AND ETHICALLY CHALLENGED: Pima College and this professor **view cheating as a serious ethical failure**. If you have an opportunity to cheat, just don't do it. If you see someone else cheating; report it. It is a part of your growth as a student and person, growth needed in your future profession and personal affairs. It's called integrity, character, backbone. Cheating is not fair to others; it is simply not acceptable behavior. Unchecked, this weak mindedness can lead to evil. Why should any of us put up with that poor behavior? A student charged with cheating is subject to appropriate penalty up to and including dismissal from the course, with either a withdrawal (W) grade or an F and perhaps also a note added to your student record. If particularly egregious, a student may be expelled from Pima College for some length of time. A test score which has been affected by a cheating penalty will not be given half-weight should that test turn out to be the lowest score.

Less serious, but still of concern is **inappropriate, disruptive behavior**. This includes usage of cell phones in class or leaving class to attend to telephone calls. **These behaviors and activities are cause for penalty, even possibly dismissal** from the course, at the Instructor's discretion.

Reasonable accommodations, including materials in an alternative format, will be made for individuals with disabilities when a minimum of five working days advanced notice is given. Pima Community College students, contact the West Campus Disabled Student Resources Office.

Figure 1 standard, college approved ADA statement