SYLLABUS

Spring 2017

ASTR 1346, SECTION 001 (INTRODUCTORY ASTRONOMY II)

STARS, GALAXIES, and UNIVERSE

Instructor: **Dr. Nilakshi (Nila) Veerabathina**

Class Location: Room 101, Science Hall (SH), UT Arlington

Class Times: Tuesday and Thursday: 11:00 AM - 11:50 AM

Office Location: Room 120 C, Science Hall, UT Arlington

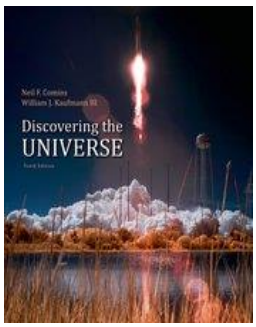
Office Hours: TTh: 10:30 – 11:00 am and 12:00-12:30 pm or by appointment

Email: Please use the e-mail option in Blackboard (http://elearn.uta.edu)

Phone: 682-999-8571 (Call only during business hours, and please do not leave any voice messages because my phone system is not well equipped for voice messages.)

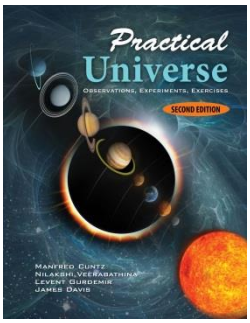
Mailbox #: 19059

Faculty Profile: http://www.uta.edu/profiles/nilakshi-veerabathina



Required Course Material

1. Text Book: ***Discovering the Universe,*** 10th Edition, Neil F. Comins and W. J. Kaufmann (W. H. Freeman and Company publication)



2. Lab Manual: ***Practical Universe: Observations, Experiment and, Exercises*** (2nd Ed.) by Cuntz, Veerabathina, Gurdemir (Kendall/Hunt Publishing Company)

(The lab manual can be purchased either from the UT Arlington Bookstore or directly from the publisher's website http://www.kendallhunt.com/cuntz/)

(**Caution**: **Never buy a used Lab Manual** as it will have missing worksheets.)

3. Clicker: ***iClicker 2 Classroom Response Device*** (The purchase and registration information is given on Page 5 of this syllabus.)

Class Slides: The class slides will be available on ***http://webct.uta.edu/*** after every lecture.

Reference book: **Astronomy Today**, 8th Edition, Chaisson and McMillan, (Prentice Hall publication) *No need to purchase it*.

Description

This is a one semester lecture plus laboratory course on astronomy with an emphasis on the study of the Sun as a star, measurement of different properties of stars, birth, evolution and death of stars, strange states of matter (neutron stars and black holes), Milky Way Galaxy, study of the Universe beyond our Galaxy, formation and evolution of galaxies. As we consider more distant objects, such as active galaxies and quasars, we move backwards in time, ultimately arriving at big Bang. The course finally takes you to the current cosmological ideas.

Learning Objectives

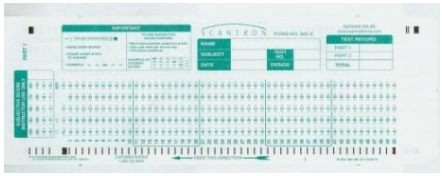
On the completion of this course students should be able to

- demonstrate the methods and the advantages of advanced technology that astronomers use to obtain information about celestial objects.
- describe the nature of scientific research and process of science in the fields of Physics and Astronomy.

- explain the basic concepts of Physics, such as gravity, nature of light, laws of motion and thermal radiation etc.
- list and describe the layers of the Sun's interior and atmosphere, sunspots and analyze the effects of Sun activities on the Earth.
- describe the nature and evolutionary paths of stars from birth to white dwarf, neutron stars, or black holes.
- demonstrate the properties and evolution of our galaxy, other galaxies and the entire universe, and analyze the experimental basis for the Big Bang theory of the universe.
- discuss our place in the Universe and apply it to understand the possible existence of extra-terrestrial life in the universe.
- effectively communicate orally with small groups and/or in front of the class.
- apply Astronomy and basic Physics knowledge to analyze new situations.
- prepare to study other subjects that require on a prior knowledge of Astronomy and basic Physics.

Prerequisites
While there are no formal prerequisites, a familiarity with high school mathematics is needed. Although the course stands on its own, the astronomical material follows that of ASTR 1345.

Exams and Grading
There will be three Tests and a Final exam. Points will be allotted based on 3 best of the three Tests and the Final exam. If you are not present for a test, you will receive a zero. You will be allowed to drop the test with the lowest grade (including a test that is missed). There will be ***no makeup*** tests, except in special circumstances in which case they must be arranged in advance. You have to bring **your own scantrons** (No. 882-E) for the tests and the final exam.



The tests and final exam are multiple choices. The final exam is ***comprehensive***. Your course grade will be determined as follows:

Tests and Final exam average: (best 3 of 4)	65%
Lab:	25%
Class participation:	10%

The grading scale would be as follows.
90-100: A; 80-89: B; 70-79: C; 60-69: D; Less than 60: F (Fail)

Lab Work
As this is a lab science course, *if you **do not obtain a passing grade** (60%) in your lab you **cannot** pass the course*, regardless of how well you do on your tests.

You will be attending lab once every week. The labs meet at different locations every week, such as Round House Planetarium, Science Hall lab rooms, or outside for the telescope night lab. Keep the lab syllabus handy to know the location for each week. In the lab you will collect and analyze data, interpret their result, and draw meaningful conclusions. The lab syllabus and more information about your lab section would be available on the Blackboard.

Attendance Policy
Attendance in class is strongly recommended, since lectures will provide supplemental material that will appear on the tests. Roll call will not be taken on regular basis, but there will be several class activities, for example, **group discussions, homework and related activities, in-class writing, pop-up or before-and-after quizzes, think-pair-share** etc. that will **count towards your class participation points**. Out-of-class reading assignments will also be part of the course.

Dates to remember

Jan 16	No classes (Martin Luther King Jr. Day holiday)
Feb 1	Census Date
Mar 13-18	No classes (Spring Break)
Mar 31	Last day to withdraw with an automatic grade of W

Special Astronomy thrill

Feb. 2	A marvelous show in the UTA planetarium (CPB)	Magnificent Sun
Mar. 9	An excellent show in the UTA planetarium (CPB)	Black Holes
Apr. 20	A great show in the UTA planetarium (CPB)	Cosmic Origins

Class Schedule

This syllabus provides a general plan for the course; deviations may be necessary. Test dates are targets and subject to change. As the instructor for this course, I reserve the right to adjust this schedule in any way that serves the educational needs of the students enrolled in this course.

Dates	**Lecture Topics**	**Chapter**
Jan. 17, 19, 24, 26, 31	The Sun: Our Extraordinary Star, Review of some part of Light & Other Electromagnetic Radiation	**10, 3 & 4**
Feb. ***2***, 7, 9, 14	Characterizing Stars	**11**
Feb 16	**Test 1 (Chapters 10, 11 and part of 3 & 4)**	
Feb. 21, 23, 28	Lives of Star from Birth to Middle Age	**12**
Mar. 2, 7, ***9***	The Deaths of Stars	**13**
Mar. 21, 23	Black Holes	**14**
Mar. 28	**Test 2 (Chapters 12, 13 & 14)**	
Mar. 30, Apr. 4, 6	The Milky Way Galaxy	**15**
Apr. 11, 13	Galaxies	**16**
Apr. 18, ***20***	Quasars, Other Active Galaxies	**17**
Apr. 25	Cosmology; Astrobiology	**18, 19**
Apr. 27	**Test 3 (Chapters 15, 16, 17, 18, 19)**	
May 2	Any remaining topic	
May 4	Review	
May 9	**Final Exam (Chapters 10 – 19) 11:00 am - 12:00 pm (Same room 101 SH)**	

Cell Phones/Electronic Devices Policy

Use of cell phones and other electronic devices for non-academic reasons is prohibited in the class. Cell phones should stay in your pockets or backpacks unless indicated in the class to take them out to use as a learning tool. Same is true for the other electronic devices such as laptops, ipads etc. Those can be used only for taking notes and sometimes for academic reasons when indicated. Step out of the class if you need to take any urgent or emergency call.

Student Feedback Survey

At the end of each term, students enrolled in classes categorized as lecture, seminar, or laboratory will be asked to complete an online Student Feedback Survey (SFS) about the course and how it was taught. Instructions on how to access the SFS system will be sent directly to students through MavMail approximately 10 days before the end of the term. UT Arlington's effort to solicit, gather, tabulate, and publish student feedback data is required by state law; student participation in the SFS program is voluntary.

Electronic Communication
UT Arlington has adopted MavMail as its official means to communicate with students about important deadlines and events, as well as to transact university-related business regarding financial aid, tuition, grades, graduation, etc. All students are assigned a MavMail account and are responsible for checking the inbox regularly. There is no additional charge to students for using this account, which remains active even after graduation. Information about activating and using MavMail is available at http://www.uta.edu/oit/cs/email/mavmail.php.

Academic Dishonesty
It is the philosophy of The University of Texas at Arlington that academic dishonesty is a completely unacceptable mode of conduct and will not be tolerated in any form. All persons involved in academic dishonesty will be disciplined in accordance with University regulations and procedures. Discipline may include suspension or expulsion from the University.

"Scholastic dishonesty includes but is not limited to cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts." (Regents' Rules and Regulations, Part One, Chapter VI, Section 3, Subsection 3.2, Subdivision 3.22)

Student Support Services Available
The University of Texas at Arlington provides a variety of resources and programs designed to help students develop academic skills, deal with personal situations, and better understand concepts and information related to their courses. These resources include tutoring, major-based learning centers, developmental education, advising and mentoring, personal counseling, and federally funded programs. For individualized referrals to resources for any reason, students may contact the Maverick Resource Hotline at 817-272-6107 or visit www.uta.edu/resources for more information.

Drop Policy
Students may drop or swap (adding and dropping a class concurrently) classes through self-service in MyMav from the beginning of the registration period through the late registration period. After the late registration period, students must see their academic advisor to drop a class or withdraw. Undeclared students must see an advisor in the University Advising Center. Drops can continue through a point two-thirds of the way through the term or session. It is the student's responsibility to officially withdraw if they do not plan to attend after registering. **Students will not be automatically dropped for non-attendance**. Repayment of certain types of financial aid administered through the University may be required as the result of dropping classes or withdrawing. For more information, contact the Office of Financial Aid and Scholarships (http://wweb.uta.edu/ses/fao).

Disability Accommodations
UT Arlington is on record as being committed to both the spirit and letter of all federal equal opportunity legislation, including *The Americans with Disabilities Act (ADA), The Americans with Disabilities Amendments Act (ADAAA),* and *Section 504 of the Rehabilitation Act.* All instructors at UT Arlington are required by law to provide "reasonable accommodations" to students with disabilities, so as not to discriminate on the basis of disability. Students are responsible for providing the instructor with official notification in the form of a letter certified by the **Office for Students with Disabilities (OSD).** Students experiencing a range of conditions (Physical, Learning, Chronic Health, Mental Health, and Sensory) that may cause diminished academic performance or other barriers to learning may seek services and/or accommodations by contacting:
The Office for Students with Disabilities, (OSD) www.uta.edu/disability or calling 817-272-3364.

Counseling and Psychological Services, (CAPS) www.uta.edu/caps/ or calling 817-272-3671.

Only those students who have officially documented a need for an accommodation will have their request honored. Information regarding diagnostic criteria and policies for obtaining disability-based academic accommodations can be found at www.uta.edu/disability or by calling the Office for Students with Disabilities at (817) 272-3364.

Non-Discrimination Policy
The University of Texas at Arlington does not discriminate on the basis of race, color, national origin, religion, age, gender, sexual orientation, disabilities, genetic information, and/or veteran status in its educational programs or activities it operates. For more information, visit uta.edu/eos.

Title IX
The University of Texas at Arlington ("University") is committed to maintaining a learning and working environment that is free from discrimination based on sex in accordance with Title IX of the Higher Education Amendments of 1972 (Title IX), which prohibits discrimination on the basis of sex in educational programs or activities; Title VII of the Civil Rights Act of 1964 (Title VII), which prohibits sex discrimination in employment; and the Campus Sexual Violence Elimination Act (SaVE Act). Sexual misconduct is a form of sex discrimination and will not be tolerated. *For information regarding Title IX, visit* www.uta.edu/titleIX or contact Ms. Jean Hood, Vice President and Title IX Coordinator at (817) 272-7091 or jmhood@uta.edu.

Campus Carry
Effective August 1, 2016, the Campus Carry law (Senate Bill 11) allows those licensed individuals to carry a concealed handgun in buildings on public university campuses, except in locations the University establishes as prohibited. Under the new law, openly carrying handguns is not allowed on college campuses. For more information, visit http://www.uta.edu/news/info/campus-carry/

The IDEAS Center
IDEAS center at 2nd Floor of Central Library offers **free** tutoring to all students with a focus on transfer students, sophomores, veterans, and others undergoing a transition to UT Arlington. To schedule an appointment with a peer tutor or mentor email IDEAS@uta.edu or call (817) 272-6593.

The English Writing Center (411 LIBR)
The Writing Center Offers free tutoring in 20-, 40-, or 60-minute face-to-face and online sessions to all UTA students on any phase of their UTA coursework. Their hours are 9 am to 8 pm Mon.-Thurs., 9 am-3 pm Fri. and Noon-6 pm Sat. and Sun. Register and make appointments online at http://uta.mywconline.com. Classroom Visits, workshops, and specialized services for graduate students are also available. Please see www.uta.edu/owl for detailed information on all our programs and services.

The Library's 2nd floor Academic Plaza offers students a central hub of support services, including IDEAS Center, University Advising Services, Transfer UTA and various college/school advising hours. Please check the link for more information http://library.uta.edu/academic-plaza

Emergency Exit Procedures
Should we experience an emergency event that requires us to vacate the building, students should exit the room and move toward the nearest exit. This room (101 SH) has two exits. One is on the back and other is on the right side of the classroom. When exiting the building during an emergency, one should never take an elevator but should use the stairwells. Faculty members and instructional staff will assist students in selecting the safest route for evacuation and will make arrangements to assist handicapped individuals.

"iClicker 2" Purchase and Registration Instructions

Purchase: You can purchase the iClicker 2 remote device either from UT Arlington Bookstore http://uta.bkstr.com or directly from the iClickers company's website https://www1.iclicker.com/products/iclicker-2/

Registration:

- Log into Blackboard Learn and select your course (ASTR1346-001).
- Locate and click on the **i>clicker Registration** link on the *left panel* of the course.
- Enter your i>clicker remote ID (given at the back of your device) and click **Submit**.
- Your clicker is all set to be used in the course. ☺

Note: *If you are using i>clicker for more than one course, you only need to register the clicker in one course and the registration data will automatically be applied to all of the other Blackboard courses for that semester.*

Live by the HONOR CODE

I pledge, on my honor, to uphold UT Arlington's tradition of academic integrity, a tradition that values hard work and honest effort in the pursuit of academic excellence. I promise that I will submit only work that I personally create or that I contribute to group collaborations, and I will appropriately reference any work from other sources. I will follow the highest standards of integrity and uphold the spirit of the Honor Code.

Emergency Phone Numbers: In case of an on-campus emergency, call the UT Arlington Police Department at **817-272-3003** (non-campus phone), **2-3003** (campus phone). You may also dial 911.