

SYLLABUS
PHYS 4650 Introduction to Modern Astrophysics
Fall 2016

Professor: Dr. Ohad Shemmer

E-mail: ohad@unt.edu

Phone: 940-369-8110

Class: TR 9:30–10:50 (EESAT-190)

Recitation: R 2:00–2:50 (EESAT-190)

Office: EESAT-220C

Office Hours: T 1:00-3:00, or by appointment

Prerequisites: PHYS 3010.

Text Book: “An Introduction to Modern Astrophysics”, B. W. Carroll and D. A. Ostlie (Pearson, Addison Wesley, 2nd. edition, 2007).

Course Content: This course provides an introduction to the basic concepts and methods of modern astrophysics and cosmology. Topics include the energy source of the Sun, stellar evolution, galaxies, black holes, as well as the structure and fate of the Universe.

Exams: There will be a mid-term and a final examination.

Homework: Homework sets will be assigned each week (except for the last week) during the recitation and are due during the recitation of the following week.

Project: In-class presentation on an assigned topic (~ 20 minutes in length). Selected topics include: Supernovae, Gamma-Ray Bursts, Active Galactic Nuclei, Extrasolar Planets, Cosmic Microwave Background Radiation, Intergalactic Medium, Gravitational Waves. Assigned topic must be selected by 9/29/2016.

Grading:

Homework	25%
Project	25%
Mid-Term Exam ^a	20%
Comprehensive Final Exam ^b	30%
Total	100%

^aon 10/18/2016, 9:30am–10:50am

^bon 12/15/2016, 8:00am–10:00am

SCHEDULE

Week	Topic
Aug. 30	Celestial Mechanics
Sep. 6	Light and Telescopes
Sep. 13	The Interaction of Light and Matter
Sep. 20	The Classification of Stellar Spectra
Sep. 27	The Energy Source of the Sun
Oct. 4	Stellar Structure
Oct. 11	Stellar Parameters
Oct. 18	The Interstellar Medium and Star Formation
Oct. 25	Stellar Evolution
Nov. 1	White Dwarfs, Neutron Stars, and Black Holes
Nov. 8	The Milky Way Galaxy
Nov. 15	Galaxies: Structure and Evolution
Nov. 22	Active Galaxies ¹
Nov. 29	Cosmology ¹
Dec. 6	Structure and Evolution of the Universe ¹

¹ Including in-class presentations of assigned projects

Addendum to Course Syllabus

The University of North Texas makes reasonable academic accommodation for students with disabilities. Students seeking reasonable accommodation must first register with the Office of Disability Accommodation (ODA) to verify their eligibility. If a disability is verified, the ODA will provide you with a reasonable accommodation letter to be delivered to faculty to begin a private discussion regarding your specific needs in a course. You may request reasonable accommodations at any time, however, ODA notices of reasonable accommodation should be provided as early as possible in the semester to avoid any delay in implementation. Note that students must obtain a new letter of reasonable accommodation for every semester and must meet with each faculty member prior to implementation in each class. Students are strongly encouraged to deliver letters of reasonable accommodation during faculty office hours or by appointment. Faculty members have the authority to ask students to discuss such letters during their designated office hours to protect the privacy of the student. For additional information see the Office of Disability Accommodation website at <http://www.unt.edu/oda>. You may also contact them by phone at [940.565.4323](tel:940.565.4323).

UNT's policy on Academic Dishonesty can be found at:

<http://www.vpaa.unt.edu/academic-integrity.htm>

Drop information is available in the schedule of classes at:

<http://registrar.unt.edu/registration/schedule-of-classes>

The Student Perceptions of Teaching (SPOT) is a requirement for all organized classes at UNT. This short survey will be made available to you on-line at the end of the semester and will provide you with an opportunity to provide feedback to your course instructor. SPOT is considered to be an important part of your participation in this class. In addition to SPOT, there will be a brief in-class course survey during the last two weeks of the semester.

For the Fall 2016 semester you will receive an email on November 21st (12:01 a.m.) from "UNT SPOT Course Evaluations via IASystem Notification" (no-reply@iasystem.org) with the survey link. Please look for the email in your UNT email inbox. Simply click on the link and complete your survey.

After logging in to the my.unt.edu portal, students can access the SPOT survey site by clicking on the SPOT icon. A list of their currently enrolled courses will appear. Students complete each course evaluation independently. During the long terms, the SPOT is open for students to complete two weeks prior to final exams. During the summer terms, the SPOT is open for students to complete six days preceding their final exam. See [SPOT Calendar](#) for specific dates and deadlines.