

Astronomy 4100: Astronomical Techniques

Winter 2017

Lecture: 9:35-10:30 MWF, Room 177, Physics Building

This is a 3 credit course.

Professor: Jeff Conn (220 Physics, 313-577-7816), af8229@wayne.edu)

Office Hours: By appointment

Text: *Measuring the Universe* by George H. Rieke; Cambridge 2012 (First Edition)

Exams: 3 Exams (60%)

There will be two exams during the term and one as the final exam.

Homework (40%)

Homework problems are regularly assigned during the term. Homework is due 1 week after being assigned, unless otherwise states.

Final Exam

The final is scheduled for Monday, 1 May 2017, 8:00-10:30. Date and time may be changed. If so, change will be discussed in class. This will be the third of the exams.

Students with Disabilities

If you have a documented disability that requires accommodations, you will need to register with Student Disability Services for coordination of your academic accommodations. The Student Disability Services (SDS) office is located at 1600 David Adamany Undergraduate Library in the Student Academic Success Services department. SDS telephone number is 313-577-1851 or 313-577-3365 (TTD only). Once you have your accommodations in place, I will be glad to meet with you privately during my office hours or at another agreed upon time to discuss your needs. Student Disability Services' mission is to assist the university in creating an accessible community where students with disabilities have an equal opportunity to fully participate in their educational experience at Wayne State University.

Day By Day in Class-Changes to Schedule will be discussed in class

Week	Topic	Chapters	
9 Jan	Photoelectric Effect, Blackbodies	-	
11 Jan	Spectral Lines and Photons	-	
13 Jan	Atomic Spectra and Compton Effect	-	
16 Jan	No Class: MLK Day	-	
18 Jan	Basics of Radiometry and Images	1.1-1.3	

20 Jan	Optics and Noise	1.4-1.5	
23 Jan	Telescopes I	2.1-2.2	
25 Jan	Telescopes II	2.3	
27 Jan	Telescopes III	2.4-2.5	
30 Jan	Photodectors	3.1-3.3	
1 Feb	Infrared Detectors	3.4-3.5	
3 Feb	CCDs	3.6-3.9	
6 Feb	Review	-	
8 Feb	Exam I	-	
10 Feb	Imagers	4.1-4.3	
13 Feb	Imaging	4.4-4.5	
15 Feb	Astrometry	4.6-4.7	
17 Feb	Stellar Photometry	5.1-5.2	
20 Feb	Physical Photometry	5.3-5.4	
22 Feb	Polarimetry	5.5-5.6	
24 Feb	Spectroscopy I	6.1-6.2	
27 Feb	Spectroscopy II	6.3	
1 Mar	Spectroscopy III	6.4-6.6	
3 Mar	Adaptive Optics I	7.1-7.3	
6 Mar	Adaptive Optics II	7.4	
8 Mar	Adaptive Optics III	7.5-7.6	
10 Mar	Deconvolution	7.7	
13-17 Mar	No Class: Spring Break	-	
20 Mar	High Contrast	7.8	
22 Mar	Review	-	
24 Mar	Exam II	-	

27 Mar	Bolometers	8.1-8.2	
29 Mar	Radio Receivers	8.3	
31 Mar	Radio Astronomy	8.4	
3 Apr	Radio Observations	8.5-8.6	
5 Apr	Interferometry	9.1-9.2	
7 Apr	Aperture Synthesis	9.3	
10 Apr	Optical Interferometry	9.4	
12 Apr	Soft X-Rays	10.1-10.2	
14 Apr	Hard X-Rays	10.3-10.4	
17 Apr	Gamma Rays	10.5-10.6	
19 Apr	Gamma Rays	10.5-10.6	
21 Apr	Cosmic Rays and Gravity Waves	11	
24 Apr	Review	-	
1 May	Final Exam		