

ASTRONOMY II (ASTR 1020)

COURSE SYLLABUS – FALL 2009

Lecture meeting 2:15 - 3:35 pm on Tuesday and Thursday in Brown 261

Instructors:	Prof Richard Ignace Department of Physics & Astronomy
Email:	ignace at etsudotedu
Web:	http://www.etsu.edu/physics/ignace/astroII/astroII.html
Office:	274 Brown Hall
Office Hours:	11:00–12:00 am on T, W, Th, or by appointment
Office Phone:	(423) 439-6904 / 439-4231
Fax:	(423) 439-6905

Objectives:

To learn about the nature of stars, galaxies, and the universe as a whole. To learn about the physical principles operating in this context. To think critically about interpreting physical measurements and about testing physical theories. To develop an appreciation for the many wonders that astronomy offers.

Grading:

The course is for 4 credit hours: 3 credits for lecture and 1 credit for lab. Grades will be assessed as follows

- 25% – Lab (must attend a minimum of 8 labs!)
- 10% – Four Multiple Choice Homework Assignments
- 40% – Three Multiple Choice Mid-Term Exams
- 25% – Comprehensive Multiple Choice Final Exam

Homework Notes – Homework assignments will be multiple choice. You will hand in a scantron (that you must purchase) with you answers. These are due at the beginning of class on the indicated dates.

Exam Notes – All exams will be multiple choice, and the final will be comprehensive. Unlike homework, scantrons will be provided.

Lab Notes – There will be ten regularly-scheduled evening labs. **Students must submit their work for at least 8 of the labs to avoid an automatic “F”.** (Of course, if you attend only 8 labs, the best possible lab score that you can achieve will be only 80%.) Refer to the Lab Synopsis for more details about lab.

Required Materials:

The text for the course will be *Astronomy Today* by Chaisson and McMillan. Astronomy II will deal mainly with those chapters pertinent to Stars and Galaxies, with some coverage of earlier material. Each student must have the ASTR-1020 Astronomy II Laboratory Manual, as well as the Star and Planet Finder. A scientific calculator is needed.

Schedule:

There are 16 weeks in the autumn session. The following is a fairly good schedule of material that will be covered in the course for each lecture. A given topic may overrun into the lecture following or begin in the lecture prior; to be safe, attend every lecture!

<i>Week</i>	<i>Date</i>	<i>Topic</i>	<i>Chapter</i>	<i>Homework</i>	<i>Exam</i>	<i>Lab</i>
1	09/01	Introduction and Astromaths	1			No Lab in Week 1
	09/03	The Sky	1			No Lab in Week 1
2	09/08	The Remarkable Mr. Newton	2			No Lab in Week 2
	09/10	Properties of Light	3, 5			No Lab in Week 2
3	09/15	Telescopes	3, 5			Lab meets
	09/17	Properties of Radiation	3, 4			Lab meets
4	09/22	Properties of Gases	4			Lab meets
	09/24	The Sun, Our Nearest Star	16	HW#1		Lab meets
5	09/29	The Study and Properties of Stars	17			Lab meets
	10/01	The Treasure Trove of Binary Stars	17			Lab meets
6	10/06	Star Formation	19			Lab meets
	10/08	Review for Exam #1			EXAM #1	Lab meets
7	10/13	Stellar Evolution	20			Lab meets
	10/15	The Demise of Stars	21			Lab meets
8	10/20	Fall Break				No Lab in Week 8
	10/22	Stellar Corpses	22	HW#2		No Lab in Week 8
9	10/27	The Milky Way Galaxy, Part One	18, 23			Lab meets
	10/29	The Milky Way Galaxy, Part Dieu	23			Lab meets
10	11/03	Review for Exam #2			EXAM #2	Lab meets
	11/05	Galaxies	24			Lab meets
11	11/10	Hubble's Expanding Universe	24			Lab meets
	11/12	Active Galactic Nuclei	25			Lab meets
12	11/17	Cosmology: The Nature of Spacetime	26			Lab meets
	11/19	Cosmology: The Early Universe	27			Lab meets
13	11/24	Cosmology: The New Universe	27			No Lab in Week 13
	11/26	Thanksgiving Break				No Lab in Week 13
14	12/01	Searching for Planets	15.6	HW#3		Lab meets
	12/03	Review for Exam #3			EXAM #3	Lab meets
15	12/08	Searching for Life	28			No Lab in Week 15
	12/10	Review for FINAL EXAM		HW#4		No Lab in Week 15
16	12/15	FINAL EXAM (10:30-12:30)				No Lab in Week 16

Students with Disabilities: I need to hear from anyone who has a disability which may require some modification of seating, testing, or other class requirements so that appropriate arrangements may be made. Please see me after class or during my office hours.

Complaint Procedures: In the event of a "complaint", the first step would be to speak with the Instructor. Alternatively one could speak with the Chair of Physics and Astronomy in 277 Brown Hall.

ASTR 1020 – Fall 2009 – Lab Synopsis

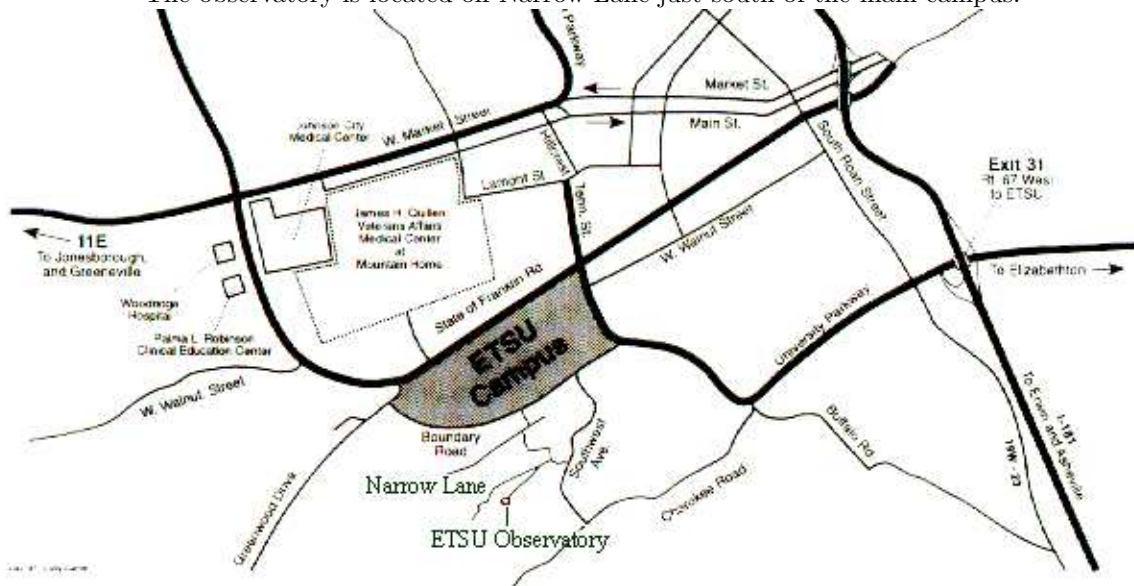
- The Lab Instructor will be Mr James Tittle.
- There are 10 regularly scheduled labs. There are also 2 extra-credit labs available. Because this course is for lab credit, **you must attend a minimum of 8 of these 12 lab meetings or you will receive a grade of “F” for the entire course!** (Attending just the minimum 8 labs means that your maximum lab score cannot exceed 80%.)
- Lab sections are Monday, Tuesday, and Wednesday evenings, from 7:55 to 9:55 pm. **Please attend only your registered lab section!** To switch lab nights, you must in fact drop the course and add the section that better suits your schedule. (We cannot guarantee that after dropping the course, your slot will be reserved for adding a different section. Neither the Instructor nor the Department can be responsible for reserving or otherwise ensuring you a space in the course if you choose to attempt drop-and-add.)
- A Lab Manual (for Astronomy II) is required. You will also need a scientific calculator and Planet/Star Finder.
- Labs are to be completed and write-ups returned by the end of the lab sessions. No late lab write-ups will be accepted. You cannot make-up a missed lab.
- One of the optional labs (#23) is take-home. Students must go to a dark site to observe the Milky Way in the sky and answer questions about their observations. The lab will be due at the beginning of the last lecture of the semester, Thursday, December 10.
- Outdoor labs will be held at the observatory, regardless of weather. Remember to dress **WARMLY** (coat, hat, gloves) as needed as night temperatures can be quite cold.
- Maps to find the Planetarium and Observatory are provided overleaf.
- Below is the Lab Schedule, indicating the meeting place and labs for the different weeks. For outdoor labs, alternate indoor labs are indicated in the event of bad weather.

Week	Dates	Meeting Location	Outdoor Lab	Indoor Lab
1	Aug 31, Sep 1, 2	No Lab	—	—
2	Sep 7, 8, 9	No Lab	—	—
3	Sep 14, 15, 16	Brown 264	—	Lab #3: Planetarium
4	Sep 21, 22, 23	Observatory	Lab #1: Constellations	(Lab #5: Distance Modulus)
5	Sep 28, 29, 30	Brown 264	—	Lab #7: Photometry
6	Oct 5, 6, 7	Observatory	Lab #8: Deep Sky	(Lab #12: Galactic Survey)
7	Oct 12, 13, 14	Brown 264	—	Lab #6: Spectra
8	Oct 19, 20, 21	No Lab	—	—
9	Oct 26, 27, 28	Observatory	Lab #16: Imaging	(Lab #13: Galaxies)
10	Nov 2, 3, 4	Brown 264	—	Lab # 9: Mass-Loss
11	Nov 9, 10, 11	Observatory	Lab #10: Distances	(Lab #11: Distances)
12	Nov 16, 17, 18	Brown 264	—	Lab#19 Mass-Luminosity Relation
13	Nov 23, 24, 25	No Lab	—	—
14	Nov 30, Dec 1, 2	Observatory	Lab #4: Parallax	(Lab #15: Starburst Galaxy)
15	Dec 7, 8, 9	Brown 264	—	Lab #17: Expansion
16	Dec 14, 15, 16	No Lab	—	—

* Lab #23 is an extra-credit take-home lab.

Observatory Directions

The observatory is located off Narrow Lane just south of the main campus.



Planetarium Directions

The planetarium is located on the 3rd floor of Hutcheson Hall.

