

Astronomy 280: Evolution of the Universe

Instructor: Brent Tully

Classes: Watanabe 114, T-Th 1:30-2:45

Office hours: Watanabe 423 following classes

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Graduate students serving as TA's will be available for consultation on a drop-in basis in Watanabe 421 (Study Center & Library). TA's and hours will be announced.

Evidence has accumulated that the universe began about 14 billion years ago as a hot, dense 'Big Bang'. This course will explore current ideas about that event and about how the universe has transformed since that initial time. The course will not have an official text. A good reference is *Galaxies and Cosmology* by M H Jones and R J A Lambourne, Cambridge University Press.

Grades: Final exam (30%) Thursday, Dec. 17, 2015 12:00– 2:00 pm, Wat 114

Two midterms (each 20%)

Five homework assignments (each 5%)

(expect ~ 6 homework assignments but only top 5 count in grade)

Three or four class presentations (5% total)

Key dates:

Last date to DROP: Aug 31

Last date to WITHDRAW: Oct 23

Tentative Lecture Plan

- 1 Aug 25 T ... Introduction, historical**
- 2 27 R ... Basic concepts**
- 3 Sep 1 T ... Big Bang overview**
- 4 3 R ... Stars – birth**
- 5 8 T ... Stars –lives**
- 6 10 R ... Solar systems**
- 7 15 T ... Galaxies today**
- 8 17 R ... Monsters**
- 9 22 T ... Distances**
- 10 24 R ... Large Scale structure**
- 11 29 T ... 1st MIDTERM**

12 Oct 1 R ... Special relativity
13 6 T ... General relativity
14 8 R ... Dark matter
15 13 T ... Expanding universe
16 15 R ... Models of the universe
17 20 T ...
18 22 R ... Evidence for Big Bang
19 27 T ...
20 29 R ... 2nd MIDTERM
21 Nov 3 T ... First 3 minutes
22 5 R ...
23 10 T ...
24 12 R ... First galaxies
25 17 T ...
26 19 R ... High energy physics/GUTS
27 24 T ... Inflation
26 R ... HOLIDAY
28 Dec 1 T ... Dark energy
29 3 R ... Big Bang in review
30 8 T ... Other life in the universe?
31 10 R ... Review