Physics 227 COSMOLOGY

COURSE SYLLABUS

DEPARTMENT OF PHYSICS Winter 2006 Dec 07, 2005 version 1

INSTRUCTOR:
Professor David Tytler
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Class	TuTh	2:00-3:20pm	SERF 329

Please email me if you prefer a different time. We will discuss this in the first class.

TEXTBOOK: Peter Coles and Francesco Lucchin, *Cosmology: The Origin and Evolution of Cosmic Structure* Edition 2 2002, Wiley

This is our most advanced course on cosmology, suitable for senior undergraduates and beginning graduate students. We will follow the text closely because it is largely self contained and it covers all the major parts of modern physical cosmology, with a balanced coverage of theory, instrumentation, data, and observational measurements. It does not get spend time on algebraic definitions, that can be found elsewhere.

WHO SHOULD TAKE THIS COURSE

There are no specific prerequisite courses. The course is intended for both graduate students and advanced undergraduates who have some relevant knowledge from physics and/or astronomy courses. Cosmology makes use of a wide range of physics, including Mechanics, special relativity (coordinates), Nuclear Reactions (in BBN), Statistical Physics, and Particle Physics. In most cases we need only well known major results from those topics. We will see but not use the rudiments of General Relativity. Astronomical topics include angular measurements; coordinate systems; magnitudes, fluxes and luminosity; optical filter bands (UBV etc.) and colors; stellar classification (OBAFG...), velocity measurements using redshifts, galaxies and QSOs. We require only the major results on each topic, at about the level covered in an undergraduate introduction (Physics 5 or 7).

COURSE ACTIVITIES:

Activities will include lectures and discussion in the class, homework and a term paper. The term paper will comprise short presentations to the class, and the completion and submission of an electronic file containing the paper.

Homework 40%
Term Paper 60%

ACADEMIC DISHONESTY: Please read "UC Policy on Integrity of Scholarship" in the 2000-2001 UCSD General Catalog. Dishonesty includes and is not limited to, copying from another student, allowing others to copy from you, doing work for others, claiming credit for answers which were altered after the work was handed in. Please ask before acting.

Please return following, in class, or before if you like

Name

Email

Phone Numbers

Year at university/college: undergrad: 1,2,3,4,5,6 graduate: 1,2,3,4,,5,6..
Courses in Astronomy (UCSD or equivalent)

Phys 5 or 7 (first astronomy course, with 1-2 weeks cosmology)
Phys 162 Galaxies and Cosmology
Phys 225A GR
Phys 225B GR
Phys 9 (solar system, no cosmology)
Phys 160 Stellar
Phys 161 Black Holes and Milky Way
Phys 223 Stellar Structure
Phys 224 ISM
Phys 226 Galaxy Dynamics
Phys 228 High Energy

How much Cosmology have you done?
How many weeks of course work?
Read any books?

Highest level courses in Physics?

What research have you done?

What do you want to cover most?

What do you want to take away from this course?