

DRAFT 8/26/2008

SYLLABUS
General Relativity
Physics 6333
Fall 2008

Instructor: R. Kantowski
Grader:
Lectures: Tue. 2:00-3:15 (NH 203) Fri. 11:45-1:00 (NH103)
Office: 337 Nielsen Hall, 325-3961 ext. 36337
Office Hours: Mon. 4:00-6:00 and by appointment
e-mail: kantowski@nhn.ou.edu
Text Books: *Gravity: An Introduction to Einstein's General Relativity*,
Addison Wesley,
by James B. Hartle
Relativity: Special, General and Cosmology,
Oxford University Press,
by Wolfgang Rindler
Additional Book: *An Introduction to General Relativity*,
Cambridge University Press,
by L. P. Hughston and K. P. Tod

A web site containing info about this course can be reached by going to the Physics and Astronomy page at "<http://nhn.nhn.ou.edu/>" and opening "Classes".

The course contents will be roughly follow the following:

1. 4-dimensional Special Relativity: Ch.'s 4 & 5 of Hartle, Ch.11 of Jackson, Ch.5 of Rindler and Ch.3 of Hughston & Tod. Feel free to read earlier chapters.
2. Tensor Analysis: Ch.'s 6,7, & 8 of Hartle, Ch.'s 7,8, & 10 of Rindler and Ch.'s 4-7 of Hughston & Tod.

3. The Einstein Equations: Ch. 22 of Hartle, Ch. 14 Rindler, and Ch. 13 Hughston & Tod.
4. Sample Space Times:
 - (a) Schwarzschild Metric: Ch.'s 9 & 12 of Hartle, Ch.'s 11 & 12 of Rindler and Ch. 15 of Hughston & Tod.
 - (b) FLRW Metrics: Ch. 18 of Hartle, Ch.'s 16-18 of Rindler, and Ch.'s 23-25 of Hughston & Tod.

Course Grades

Homework:	100%
Total:	100%

Your weekly homework assignment is due WMonday pm. You may leave under my office door or put it in my mail box in the Phys & Astr Office. Please keep a Xerox copy for your notebook. Grades for late papers will be reduced by 25% per week. You will **not** be penalized for 'officially' excused absences. You **may** consult/discuss etc. homework with other students; however, each of you should write up your own results to turn in. I don't want to see identical papers turned in.

Your first homework assignment is from Ch. 5 of Rindler, Ch. 3 of Hughston & Tod, and Ch. 4 of Hartle. See Web for details.

Assignment # 1 is due Wednesday September. 3.

Any student in this course who has a disability that may prevent him or her from fully demonstrating his or her abilities should contact me personally as soon as possible so we can discuss accommodations necessary to ensure full participation and facilitate your educational opportunities.