

## SYLLABUS PHYS 3302 (COSMOPHYSICS) — Spring 2010

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<b>Schedule:</b>	TT 2:00 - 3:20 pm, Sci 112
<b>Instructor:</b>	Dr. Richard WIGMANS
<b>Office, tel:</b>	Sci 114, 742-3779
<b>E-mail:</b>	wigmans@ttu.edu
<b>Office hours:</b>	TT 10:00-12:00 and by appointment
<b>Prerequisite:</b>	PHYS 2402 or equivalent
<b>Text:</b>	A compilation of relevant material will be made available by the instructor.
<b>Evaluation:</b>	Homework 30%
	Individual paper + presentation 40%
	Final 30%

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- **Course content:**

This course concentrates on topics from Astrophysics, Cosmology and Cosmic Ray physics that are of general interest to all physicists. We will discuss how knowledge about the vast Universe outside our own planet is obtained, how the Universe has evolved and continues to evolve and how outer space can be used as a laboratory for fundamental physics measurements.

- **Learning objectives and assessment:**

One objective of this course is to introduce you to the cutting edge of fundamental physics research, *i.e.* research that will most likely lead to Nobel Prizes in the next 50 years. Another objective is to make you familiar with modern literature search methods, and with the writing and public presentation of a scientific paper. These are very important skills for anyone who would like to pursue a scientific career.

The assessment of how well you have internalized and are able to apply the concepts of modern physics research will be done through evaluation of your homework and by means of a final exam. The public presentation of your research topic will be peer reviewed by your fellow students, as well as by one or several professors. The instructor will discuss these evaluations with you.

- **Credit:**

This course will count for 3 credits and can be taken as an elective by Physics and Engineering Physics majors.

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- **Grading:**

The grading will be on a straight 10-point scale. The average needed for an A is above 90, a B is above 80, a C is above 70 and a D is above 60.

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- **Other Notes:**

- There will be regular homework assignments. This homework is due in the week after it is assigned. Also the final exam is of the take-home type. It will be due 48 hours after being handed out.
  - A very important part of this course is the **individual paper**. Each student will choose a specific topic, do a literature study on this topic, write a paper on this topic and present this paper in class. It is recommended that the topics are chosen as early as possible. Each topic has to be agreed upon by the instructor, who also has a list of possible topics to choose from. The paper should have a length of at maximum 20 pages and should be written in a scientific format. The length of the presentation is about 20 minutes. The presentations will take place in the last two weeks of the semester. The paper is due on the last day of class.
  - Any student who, because of a disabling condition, may require some special arrangements in order to meet course requirements should contact the instructor as soon as possible so that necessary accommodations can be made.
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