

Physics 107 — Stars, Galaxies and the Cosmos

Winter Quarter 2009 Syllabus

Professor:	Dr. Doug Petkie Associate Professor of Physics	Lecture:	TR from 10:25 - 11:40 am 101 Fawcett Hall
E-mail:	doug.petkie@wright.edu		
Office:	243 Fawcett Hall	Lab:	PHY117
Office Phone:	x3124		Required co/pre-requisite
Office Hours:	Tuesday & Thursday from 11:45-1:00 or by appointment		

Web page: Logon to *WSU Wings* and go to *Course Studio* and/or *WebCT*

The Objectives of General Education are:

- To sharpen critical thinking, problem solving and communication skills as a basis for life-long learning.
- To learn about the aesthetic, ethical, moral, social, and cultural dimensions of human experience needed for participation in the human community.
- To increase knowledge and understanding of the past, the world in which we live, and of how the past and present have an impact on the future.

Course Objectives:

- To gain an understanding and appreciation of the scale and workings of the universe and of the physical laws that govern it.
- To learn how this information was deduced in the past and is being obtained now.
- To gain an understanding of how physics is used in astronomy and how astronomy enriches physics.
- To develop the vocabulary, concepts and background knowledge needed to appreciate current research on physics and astronomy.

Course Textbook: *Stars, Galaxies and the Cosmos*, Authors: Pasachoff and Filippenko; Publisher: Thompson. Check the on- and off-campus bookstores. This custom edition was based on the textbook: *Cosmos: Astronomy in the New Millennium*, 3rd Edition, by Pasachoff and Filippenko, (ISBN-10: 049501303X and Published in 2007). www.cengage.com offers electronic versions of the text.

Lecture and Reading: Attendance to lecture is expected. You will receive points towards your final course grade for responding to "clicker" questions in lecture and you can not earn these points if you are not present. Lecture is meant to supplement the text and clarify some of the more difficult material. Students are responsible for all assigned material in the chapter whether covered in lecture or not. It is expected that students read the text prior to class. Please feel free to stop by my office during office hours or by appointment to discuss the reading or other topics. You should find you discover new things during your second reading - even I do.

Laboratory: Concurrent registration in, or previous completion of, PHY 117 is required. See Mr. William Wagner, Laboratory Director, (#239 FH) about problems related to the laboratory class.

Homework: There is no formal homework for the course; however, I strongly suggest the formation of study groups. Trying to explain topics to each other is a very powerful way to learn the material at a deeper level. Study sessions are a great way to exchange problem-solving strategies and discuss conceptual ideas. Try to work through all of the questions in the back of each chapter, particularly T/F, multiple choice and fill-in-the-blank questions.

Exams: There will be two Mid-terms and a Final. All students have to take the Final exam. Exams may include material from the textbook plus everything covered in class and will primarily be multiple choice questions but may also include fill-in-the-blank, matching and short answer questions. No make-ups will be given for either the Mid-terms or the Final Exam. The final exam will be comprehensive and is on **Thursday, March 19th, from 10:45-12:45 in FH 101.**

Quizzes:

There will be a total of four quizzes and the best three scores will be chosen for the final grade. These will primarily be multiple choice questions but may also include fill-in-the-blank, matching and short answer questions. Quizzes will be given the last 20 mins. of the class. If a student is not present when the quizzes are handed out, then he/she cannot take the quiz. No make-up quizzes will be given.

Clickers: Clickers are remote devices used to answer multiple choice questions during lecture to assess your understanding. Rather than purchasing a clicker, you will pick up and return the clickers to a designated bin at each lecture. Participation points will be earned for "clicker" responses. Points will be scaled from never responding (0 points) to responding to at least 75% of the questions (50 points). This allows you to miss a few lectures. No make-ups will be given. You are encouraged discuss these questions and answers with other students!

Academic Integrity: (www.wright.edu/students/judicial/integrity.html)

During quizzes and exams all students are required to look only at their own paper and answer the questions on their own. Any other behavior will be considered inappropriate and will result in an automatic "F" for the quiz or exam along with the incident recorded with the Office of Judicial Services as with all violations of the Academic Integrity policy (cheating, plagiarism, etc.)

Evaluation:

Two Exams	200 points
Four Quizzes (drop one)	150 points
Final Exam	100 points
Clicker Questions	50 points

Typical Grading Scale:

90 -100% - A
80 - 89% - B
70 - 79% - C
60 - 69% - D
< 60% - F

Course Outline: The course outline may be changed at the discretion of the instructor and it may be necessary to change dates for quizzes and exams. Any changes will be announced one week in advance and an email will be sent out. It is the students' responsibility to keep up with the changes. In the past, we have kept to the schedule.

Week	Tuesday	Thursday
1	06 January Intro & The Sun (on-line materials)	08 January Chaps 2 and 11 Light, Matter, and Energy; Stars
2	13 January Quiz 1 (The Sun) Chap 11 Stars: Distant Suns	15 January Chap 11 Stars: Distant Suns
3	20 January Quiz 2 (Chaps 2 and 11) Chap 12 How Stars Shine: Cosmic Furnaces	22 January Chap 12 How Stars Shine: Cosmic Furnaces
4	27 January Exam I (Sun, Chap 2, 11, 12)	29 January Chap 13 The Death of Stars: Recycling
5	03 February Chap 13 & 14 The Death of Stars; Black Holes	05 February Quiz 3 (Chap 13) Chap 14 Black Holes: The End of Space and Time
6	10 February Chap 15 The Milky Way	12 February Chap 15 The Milky Way
7	17 February Exam II (Chaps 13, 14, 15)	19 February Chap 16 A Universe of Galaxies
8	24 February Chap 17 Quasars and Active Galaxies	26 February Chap 18 Cosmology: The Birth and Life of the Cosmos
9	03 March Quiz 4 (Chaps 16-17) Chap 18 Cosmology: The Birth and Life of the Cosmos	05 March Chap 19 In the Beginning
10	10 March Chap 20 Life in the Universe	12 March Catch up and Review
Finals week	17 March Tentative Review from 10:30 - 11:30	19 Mar Final Exam 10:45 to 12:45 (Chaps 11-20)

23 January - Last day to drop without a grade.

20 February - Last day to drop with a grade of "W".