

March 29, 2006

NUCLEAR AND ELEMENTARY PARTICLE PHYSICS

COURSE INSTRUCTOR : James Pilcher
(Office: HEP 203, Phone: 702-7443, Email: j-pilcher@uchicago.edu)

COORDINATOR: Stuart Gazes
(Office: KPTC 205C, Phone: 702-7760)

LAB INSTRUCTOR: Juan Collar
(Office: LASR 214, Phone: 702-4253)

1. LECTURES

This is a 1-quarter elective course on nuclear and elementary particle physics for juniors or seniors who have completed quantum mechanics 235. The general outline of topics is indicated in the course schedule.

Lectures are Monday, Wednesday, and Friday at 10:30 AM in KPTC-103, beginning Monday March 27, 2006. There will be no lecture on Memorial Day, Monday May 29. Reading period this quarter is June 1 and 2.

2. TEXTBOOK

The required text books are *Introductory Nuclear Physics* by K. S. Krane and *Introduction to Elementary Particles* by D. Griffiths.

3. LABORATORY

The four laboratory sessions are important for gaining familiarity with some of the tools used for studying of nuclear and particle physics and with experimental techniques. The lab sessions are from 1:30 to 5:20 on Friday/Monday or Tuesday/Thursday. You have two days for each experiment and your equipment should be undisturbed between sessions. You will have a lab every second week.

Assignments will be posted on the course web site noted below as well as on the Physics 237 bulletin board in KPTC-101. Students will also be notified by email. Please report problems or conflicts to Mr. Collar as soon as possible. The tutors cannot change the assignments.

You cannot receive a passing grade in Physics 237 unless you complete the four experiments.

As usual, you need a special laboratory notebook; National #43-649, #43-647, or equivalent. They are available at the bookstore. A brief formal report must also be submitted for each of the four experiments in KPTC-205 by 2:00 PM one week following the second session for each experiment. Students are encouraged to prepare the lab report in electronic form and to submit a printed copy of this to KPTC-205. It would expedite processing to also submit an electronic copy to the appropriate tutor.

Reports will be graded out of 10 points. Late reports must be submitted in person to Mr. Collar and will have an additional daily penalty applied. Mr. Collar has final authority in this policy.

The laboratory manual is "Laboratory Manual, Physics 237, "Nuclei and Elementary Particles", by the University of Chicago Physics Department Staff.

As noted below, the lab will constitute 25% of the final grade.

The Kersten laboratory staff has prepared a web page with information on the lab and its operating policies. This can be found at:

http://kerstenlabs.uchicago.edu/adv_labs/advanced_labs.html

The lab tutors are:

Name	Lab	Email	Office	Phone
Nausheen Shah	L1 (T/Th)	nausheen@uchicago.edu	RI-381	4-2471
Minjoon Park	L2 (F/M)	mpark@uchicago.edu	RI-388	2-7763

4. HOMEWORK

Homework problems will be assigned each Monday and will be due at the beginning of lecture the following Monday. To master the material, it is essential to work problems.

The problems will be graded on a scale of 10 points each, and will constitute 25% of the final grade. Solutions will be posted in KPTC-101 by noon of the day they are due and will be kept on reserve in Crerar Library. Solutions can also be found on the Crerar web site under the reserve course packet for the course. Late homework will not be graded although we will record that the problems were done.

5. QUIZZES AND EXAMS

There will be one midterm exam, scheduled for Friday April 28, during the normal lecture period.

Since many students taking this class are graduating seniors and their grades are due by the end of the 10th week, the final exam will be given early. It will be held on Wednesday,

May 31 from 4:30 to 6:30 in KPTC 103 and will replace the discussion section normally starting at that time.

6. MATERIAL ON THE WEB

A web page containing class handouts and other material related to the course can be found at: <http://hep.uchicago.edu/~pilcher/p237-06/> .

7. COURSE GRADE

The final grade will be calculated as follows:

<u>Component</u>	<u>Percentage</u>
Final Exam	30%
Midterm Exam	20%
Homework	25%
Laboratory	25%
TOTAL:	100%

8. DISCUSSION SESSIONS

There will be a discussion session every Wednesday from 4:30 to 5:20 PM beginning April 5. The group will meet in KPTC-103 and will be led by Drew Fustin. Drew's office is RI-380 where the phone number is 4-2471 but he can be reached most efficiently by email.

The discussion sessions are part of the course. It is in your best interest to attend and to *interact* with other students regularly. One of the most effective ways to clear up misunderstandings is to bring your ideas into the open for discussion with others.

9. CHANNELS OF COMMUNICATION

Both the tutor and the instructor have regular office hours and you are encouraged to visit them to discuss problems or questions.

James Pilcher	HEP-203	Thurs. 11:00-12:00	j-pilcher@uchicago.edu
Drew Fustin	RI-380	Tues. 12:30- 1:30	dafustin@uchicago.edu
Drew Fustin	KPTC-303	Thurs. 3:00- 4:00	

The instructor is also happy to meet with students, outside these hours. Feel free to see him before or after class to make arrangements.