PHGN 326: Advanced Physics Laboratory II Syllabus

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This second part of the advanced laboratory course deals predominantly with nuclear physics. Currently, 7 different experiments are offered. In order to successfully complete this course, you will have to do 5 of them. The experiments are:

1. Building and testing of a NaI detector

- 2. Gamma ray attenuation
- 3. Compton effect
- 4. Energy loss of alpha particles
- 5. Alpha Gamma coincidences
- 6. Gamma Gamma coincidences
- 7. Cosmic-ray angular distribution

The laboratory is conducted every second week. You are either in the Tuesday (PHGN326A) or the Thursday (PHGN326B) session. We will work from 9am to 5pm with a 1 hour lunch break from 12-1. The course will be done in groups of 2-3 students, so find yourself partners.

Every section has up to 10 groups (A-J), all have to attend the introductory session. The experiments are numbered 1-7.

Group	А	В	С	D	Е	F	G	Н	Ι	J
1: Jan 17/19	Introductory sessions									
2: Jan 31/Feb 2	1	2	3	4	1	2	-	-	-	-
3: Feb 14/16	-	6	1	2	3	4	1	2	-	-
4: Feb 28/Mar 2	3	4	-	6	7	5	2	1	1	2
5: Mar 14/16	2	5	-	1	2	1	3	7	4	6
6: Mar 28/30	4	1	2	7	-	3	6	5	2	1
7: Apr 11/13	7	-	6	-	-	-	5	-	3	4
8: Apr 25/27	-	-	4	-	5	-	-	6	7	3

I expect every student to come to the laboratory prepared along the lines of the handout to each experiment and the general handouts. A written report (from every group, but each student has to show a copy) is due to the next session. It will be reviewed (special emphasis on error determination), and is the most important basis for the grade (1/7 for each of the five experiment). As other components I will judge preparation for (1/7) and performance during (1/7) the experiment.