

PHYSICS 280: EXPERIMENTAL METHODS
Fall 2004

Professor: Howard Brooks 241 Julian 658-4653 hlbrooks@depauw.edu
Meeting Times: 1 – 3:50 T Room: 242 Julian
Office Hours: 9-10:30 MWRF

Text: **EXPERIMENTATION: An Introduction to Measurement Theory and Experiment Design,**
3rd Edition by D.C. Beard

OBJECTIVES:

By the end of the semester each student should be able to:

- 1 _ Design and construct simple experimental apparatus.
- 2 _ Conduct an open ended experiment in a small group setting.
- 3 _ Use appropriate data processing and analysis tools
- 4 _ Present results of the experimentation both in oral and visual formats

EXPECTATIONS:

CLASS ATTENDANCE AND PARTICIPATION: Students in the course will be expected to attend every class session. **IT IS EXPECTED THAT YOU WILL COMPLETE AT LEAST SIX HOURS OF WORK PER WEEK OUTSIDE OF THE CLASS MEETING TIME. (10% of the semester grade)**

HOMEWORK: Students will complete a set of homework assignments from the text. (10% of the semester grade)

JOURNALS: Each of the experiments will have a journal that stays with the experiment. Each research team will record all of their work in the experiment journal. (30% of the semester grade) Each student will maintain their own journal which must contain a weekly reflection on the work completed, an outline of the experiment plan for the next week, and any questions that need to be asked of the previous researchers or of the instructions. (30% of the semester grade)

FINAL PRESENTATIONS: Each research team will make a final oral presentation, open to the public during the final exam session. (10% of the semester grade) Additionally, each team will make a final poster and set of web pages that summarize the efforts on the project during the semester. (10 % of the semester grade)

From the University 2004-05 catalog (p. 198) grades will be assigned according to the following definitions:

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| A, A- | Achievement of exceptionally high merit |
| B+, B, B- | Achievement at a level superior to the basic level |
| C+, C, C- | Basic achievement |
| D+, D, D- | Minimum achievement that warrants credit |
| F | Failure: the achievement fails to meet course requirements.
The student receives no credit. |

DETAILED COURSE OUTLINE WITH ASSIGNED READINGS

DATE	READING	HOMEWORK	OTHER ACTION
8/31 INTRODUCTION			
9/7	CHS 1 & 2	Ch. 2 – 3, 6, 9, 10, 12	
9/14	CH 3	Ch. 3 – 1 through 14	
9/21	CHS 4 & 5	Ch. 5 – 6, 7, 10, 13, 22, 23	
9/28	CH 6	Ch. 6 – 1, 3, 5, 6, 7	
10/5			ROTATE PROJECTS!!
10/12			Submit personal journals before leaving for FALL BREAK !
10/19 FALL BREAK			
10/26			
11/2			
11/9			ROTATE PROJECTS!!
11/16	CH 7		
11/23			
11/30			
12/7			
Thursday, December 16 – 1:00 PM – FINAL ORAL PRESENTATIONS AND WRITTEN SUMMARIES SUBMITTED and PERSONAL JOURNALS DUE			