

PC131 Lab Evaluation Results

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Fall 2009

Labs in this Course

Choose the answer which best expresses your feelings about the labs.

Demographic information

1. I am taking this course because

52% it is required for my program, and I won't take any more physics than I have to.

35% it is required for my program, but I like physics.

6% it fulfills a science requirement, and is a personal interest.

6% it is not required for my program, but is a personal interest.

2. How many of the existing lab sections per week could you have fit into your schedule?

2% 5

6% 4

24% 3

31% 2

38% The section I am in is the only one I could fit into my schedule.

Fall 2009

Staff

3. My lab demonstrator was
 - 36% Susan
 - 24% Caleb
 - 19% Alan
 - 16% Cameron
 - 6% I don't know

4. The lab *demonstrator* was
 - 12% helpful in the lab.
 - 13% knowledgeable about the lab.
 - 73% both knowledgeable and helpful.
 - 2% neither knowledgeable nor helpful.

5. The lab marking
 - 13% was fair.
 - 15% included helpful feedback.
 - 66% was both fair and helpful.
 - 6% was neither fair nor helpful.

6. Observing the lab demonstrator in this course has made me
 - 11% consider applying to become a demonstrator for this course
 - 14% consider applying to become a demonstrator but not for this course
 - 5% less likely to become a lab demonstrator for this course
 - 2% less likely to become a lab demonstrator for this or any other course
 - 69% It has had no effect on my attitudes about lab demonstrating

7. The lab *supervisor* (ie. Terry) was
- 4% helpful in the lab.
 - 26% knowledgeable about the lab.
 - 67% both knowledgeable and helpful.
 - 3% neither knowledgeable nor helpful.

Organization

8. Starting many labs with a review of what was important from previous weeks was
- 71% helpful
 - 3% unnecessary
 - 17% not detailed enough to be useful
 - 9% I don't remember any of that.
9. The purpose of the labs in this course was to teach skills, (e.g. estimation, statistical analysis, use of spreadsheets, report writing, etc.), which may be useful in a variety of courses in the future, rather than just in further physics courses. Pick whichever best describes how you feel about this:
- 54% I think some of the skills I learned will be useful elsewhere.
 - 18% I've already used some of the skills I learned elsewhere.
 - 5% I don't think any of the skills I learned will be useful elsewhere.
 - 23% I'd rather have learned more physics-specific things.

10. How clear was the lab schedule? (How clear were things like what lab you would be doing each week, when things were due to be handed in, etc.?)

30% very

46% fairly

17% not much

6% awful

Material

11. The lab web page was

13% a convenient way of delivering course information.

42% a convenient way of delivering the lab manual.

24% a convenient way of delivering both course information and the lab manual.

20% not a convenient way of delivering either course information or the lab manual.

12. How clear and useful were the weekly instructions on the lab web page?

13% I always found them easy to follow.

42% I usually found them easy to follow.

24% I sometimes found them easy to follow.

20% They were usually somewhat confusing.

2% I usually asked somebody else in the lab instead of reading the instructions.

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13. How clear and easy to understand was the lab manual?
- 18% very
 - 59% fairly
 - 19% not much
 - 5% awful
14. Did you find the features (like hyperlinks) available in the online PDF version of the manual helpful?
- 22% always
 - 20% often
 - 42% occasionally
 - 7% never
 - 9% I never used the online version; I always used the printed one.
15. Did the changes announced in the lab from what was in the manual make things confusing?
- 6% always
 - 11% often
 - 35% occasionally
 - 34% rarely
 - 13% never
16. What statement best describes your experience of the templates in the lab manual?
- 30% They were helpful for simplifying data collection.
 - 7% They were helpful for simplifying calculations.
 - 47% They were helpful for both simplifying data collection and calculations.
 - 2% They were not helpful for either simplifying data collection or calculations.
 - 14% I never used the templates.

17. What statement best describes your experience of the spreadsheets on the web page?
- 15% They were helpful for simplifying data collection.
 - 14% They were helpful for simplifying calculations.
 - 43% They were helpful for both simplifying data collection and calculations.
 - 5% They were not helpful for either simplifying data collection or calculations.
 - 23% I never used the spreadsheets.
18. The marking checklists
- 56% were concise and made expectations consistent
 - 27% were concise but did not make expectations consistent
 - 13% made expectations consistent but were not concise
 - 5% were not concise and did not make expectations consistent
19. My lab partner
- 6% was knowledgeable about the labs.
 - 17% did a fair share of the work.
 - 36% was knowledgeable about the labs and did a fair share of the work.
 - 5% was not knowledgeable about the labs and did not do a fair share of the work.
 - 36% I worked with various people during the term.
20. Pick whichever fits.
- 66% I only worked with my lab partner in the lab.
 - 13% My lab partner and I occasionally communicated while writing up the labs.
 - 16% My lab partner and I regularly communicated while writing up the labs.
 - 5% My lab partner and I wrote up the labs together.

Questions and Tasks

21. To prepare for the labs, I printed off the appropriate material and read it over before the lab

13% always

29% most weeks

24% sometimes

17% rarely

18% never

22. On average, preparing the pre-lab questions and tasks took

3% less than 15 minutes.

38% between 15 minutes and half an hour.

41% between half an hour and an hour.

9% more than an hour.

8% I didn't usually do the pre-lab questions or tasks.

23. Having to prepare the pre-lab questions and tasks

43% was a better way to become familiar with the lab than simply reading the lab over beforehand.

29% was about as useful for becoming familiar with the lab as simply reading the lab over beforehand.

21% did not help me become familiar with the lab beforehand.

7% I didn't usually do the pre-lab questions or tasks.

24. Answering the in-lab questions and doing the in-lab tasks during the lab helped me to understand what I was doing and what to put in my report

30% always.

41% often.

24% occasionally.

4% never.

25. Answering the post-lab questions and doing the post-lab tasks helped me to understand what results to determine and what to put in my report

21% always.

44% often.

30% occasionally.

5% never.

Exercises

26. What statement best describes your experience of the *Determining Human Reaction Time* lab exercise?

24% I thought it was useful to compare the different types of reaction times; i.e. random, anticipated, and synchronization.

22% I thought it was very relevant to the “*Measuring g*” experiment.

49% Both of the above are true.

5% Neither of the above are true.

1% I didn't do that exercise.

27. What statement best describes your experience of the *Repeated Measurements* lab exercise?

12% I like using the pennies because it made it more fun.

42% It helped me do the calculations with average values in all experiments.

28% Both of the above are true.

17% It was confusing and I didn't understand what σ, α , etc. are all about.

1% I didn't do that exercise.

28. What statement best describes your experience of the *Introduction to Spreadsheets* lab exercise?

23% I already knew almost everything covered in that exercise, so it wasn't very useful.

39% I already knew some of what was covered in that exercise, but I learned some useful things.

26% Almost everything covered in that exercise was new to me, but now I feel more comfortable with spreadsheets.

6% Almost everything covered in that exercise was new to me, and the exercise didn't make me feel any more comfortable with spreadsheets.

6% I didn't do that exercise.

29. What statement best describes your experience of the *Processing Uncertainties* lab exercise?
- 31% It taught me what I needed to know to figure out uncertainty calculations in any future labs.
 - 13% It made me understand how to write up a *Discussion of Uncertainties*.
 - 40% Both of the above are true.
 - 13% Neither of the above are true.
 - 3% I didn't do that exercise.
30. Certain lab exercises, especially the computer ones, could be done at home so you didn't have to spend as much time in the lab. What did you think of that?
- 34% I did some of them at home, and I'm glad the option was available.
 - 48% I never did them at home, but I'm glad the option was available.
 - 4% I never did them at home, and didn't care whether the option was available.
 - 13% I tried to do some of them at home, but the instructions weren't clear enough to follow.
31. What do you think was the most valuable part about being able to do exercises at home?
- 50% Flexibility; e.g. allowed me to work alone or at another time
 - 5% Performance; e.g. I learned more, did a better job, saved time
 - 21% Both of the above are true.
 - 3% Neither of the above are true.
 - 21% I didn't do any of the exercises at home.

Performance

32. My marks in these labs have been
- 19% lower than I expected.
 - 22% higher than I expected.
 - 6% *much* lower than I expected.
 - 5% *much* higher than I expected.
 - 48% about what I expected.
33. Comparing my marks in the lab to my marks on tests, etc. in this course, my **lab mark** is
- 29% higher (5-15%) than my other marks in this course.
 - 15% lower (5-15%) than my other marks in this course.
 - 8% much lower (>15%) than my other marks in this course.
 - 20% much higher (>15%) than my other marks in this course.
 - 29% about the same ($\pm 5\%$) as my other marks in this course.
34. The amount of effort which I put into the labs was affected by external factors like midterms, assignments, etc.
- 6% never
 - 15% rarely
 - 33% sometimes
 - 26% often
 - 20% always

35. The bonus marks possible in the marking scheme, (such as higher weight for lab reports over 80 %), made me
- 3% not work as hard as otherwise.
 - 20% work no harder than otherwise.
 - 29% work a little harder than otherwise.
 - 8% work a lot harder than otherwise.
 - 40% I didn't know there were any bonus marks.
36. The amount of work required for the labs was
- 21% more than what was justified for the weighting of lab marks.
 - 8% less than what was justified for the weighting of lab marks.
 - 9% *much* more than what was justified for the weighting of lab marks.
 - 5% *much* less than what was justified for the weighting of lab marks.
 - 58% about what was justified for the weighting of lab marks.

Results

37. What statement best describes your thoughts on taking the first several weeks with exercises, the draft and final copy, etc. to produce the first lab report?
- 54% I was able to do a much better job on the lab than I would have done otherwise.
 - 21% I was able to do a much better job on the lab than I would have done otherwise, but I'd be lost if I had to do another lab report.
 - 12% I wasn't able to do a much better job on the lab than I would have done otherwise, and I'd be lost if I had to do another lab report.
 - 3% I think I would have been able to do a good job on the lab report with or without all of that.
 - 10% I didn't hand in a draft report.

38. After doing these labs

- 22% I would be more likely to choose courses with labs in the future.
- 20% I would be less likely to choose courses with labs in the future.
- 10% I would be more likely to choose physics courses in the future.
- 11% I would be less likely to choose physics courses in the future.
- 36% These labs have had no effect on my course preferences.

39. Comparing the labs to the rest of the course

- 29% the labs are harder to understand than the lecture material.
- 39% the lecture material is harder to understand than the labs.
- 12% neither the labs nor the lecture material is hard to understand.
- 17% both the labs and the lecture material are hard to understand.

40. Comparing the labs to the rest of the course

- 19% the labs take longer to do than the assignments.
- 55% the assignments take longer to do than the labs.
- 7% neither the labs nor the assignments take much time to do.
- 17% both the labs and the assignments take a long time to do.

41. The amount of potentially useful learning produced by the labs was

- 24% more than I expected based on the amount of work.
- 20% less than I expected based on the amount of work.
- 50% about what I expected based on the amount of work.
- 2% *much* more than I expected based on the amount of work.
- 5% *much* less than I expected based on the amount of work.

42. Which of the following best describes your feelings after completing these labs?
- 53% I now have a better understanding of the whole research process than I did before.
 - 9% I now have more interest in research than I did before.
 - 11% Both of the above are true.
 - 23% Neither of the above are true.

Comparison to other courses

43. What other types of *science* labs are you taking or have you taken at university?
- 51% I've only had labs in math or computer science.
 - 25% I've had labs in chemistry or biology.
 - 2% I haven't had chemistry or biology labs, but have had labs in kinesiology or psychology.
 - 17% I've had labs in at least 3 science disciplines other than physics.
 - 6% I haven't had any other science labs.
44. Do you think the use of laptops in this lab was more valuable than in other science labs? (Pick whichever fits best.)
- 20% Definitely; in other science labs laptops aren't allowed.
 - 20% Definitely; in other science labs laptops aren't useful.
 - 30% Not really; a laptop isn't really important in any science lab.
 - 16% No; there are other science labs that make better use of laptops than this one.
 - 14% I haven't had any other science labs.

45. The preparation expected for these labs is

- 39% similar to what is expected in other science courses with labs.
- 22% more than what is expected in other science courses with labs.
- 23% less than what is expected in other science courses with labs.
- 3% much more than what is expected in other science courses with labs.
- 13% I haven't had any other science labs.

46. What statement best describes your experience of the interest inspired by the labs?

- 16% These labs were more interesting than labs in other science courses.
- 34% These labs were less interesting than labs in other science courses.
- 17% These labs were *much* less interesting than labs in other science courses.
- 20% These labs were about as interesting as labs in other science courses.
- 13% I haven't had any other science labs.

47. The reports required for these labs are

- 19% more complex than those in other science courses, but they seem more worthwhile.
- 14% fairly similar to those in other science courses.
- 37% more complex than those in other science courses, but no more valuable.
- 6% less complex than those in other science courses.
- 24% I haven't had any other science courses with lab reports.

48. What statement best describes your experience of the amount of work required for the labs?
- 29% It was more than what was required in other science courses with labs.
 - 24% It was less than what was required in other science courses with labs.
 - 9% It was *much* more than what was required in other science courses with labs.
 - 25% It was about the same as what was required in other science courses with labs.
 - 13% I haven't had any other science courses with labs.
49. Overall I would rate these labs
- 16% better than other science labs.
 - 38% about the same as other science labs.
 - 27% worse than other science labs.
 - 6% *much* worse than other science labs.
 - 13% I haven't had any other science courses with labs.
50. What statement best describes the relevance of the labs to your career in science?
- 14% These labs were more relevant than labs in other science courses.
 - 40% These labs were less relevant than labs in other science courses.
 - 28% These labs were neither more nor less relevant than labs in other science courses.
 - 6% I don't intend to do any more science courses with labs.
 - 13% I haven't had any other science courses with labs.

Resources

51. How did you like the javascript *reaction time tester* on the website?

11% I tried to use it but found it confusing and gave up.

11% I found it confusing but eventually got it to work.

3% It didn't work in my browser.

61% I found it pretty easy to use.

15% I didn't try to use it.

52. How did you like the javascript *statistical calculator* on the website?

22% I tried to use it but found it confusing and gave up.

14% I found it confusing but eventually got it to work.

6% It didn't work in my browser.

22% I found it pretty easy to use.

36% I didn't try to use it.

53. How did you like the javascript *uncertainty calculator* on the website?

31% I tried to use it but found it confusing and gave up.

18% I found it confusing but eventually got it to work.

8% It didn't work in my browser.

18% I found it pretty easy to use.

26% I didn't try to use it.

54. What do you think about using a laptop in the lab with the spreadsheets provided instead of writing on the printed templates?

32% The spreadsheets were convenient to use in the lab.

8% The instructions were easy to adapt for the spreadsheet instead of the printed templates.

25% Both of the above are true.

3% Neither of the above are true.

31% I didn't try to use any of the spreadsheets on a laptop.

55. What do you think about using a laptop with the wireless access in the lab ? (Pick whichever fits best.)

16% I mainly used the laptop for the lab manual itself.

29% I liked having access to all of the website material including spreadsheets, etc.

9% I often used resources from elsewhere on the Internet, such as Google.

9% I used a laptop in the lab, but without being connected to the network.

36% I didn't use a laptop in the lab.

56. What statement best describes the feedback you got on the draft of the first lab?

69% I found it pretty useful.

14% I didn't find it very useful.

10% I didn't hand in a draft report; I only handed in a final.

3% I didn't hand in a final report; I only handed in a draft.

4% I didn't hand in a *Measuring 'g'* report.

57. What statement best describes the **final mark** you received on the *Measuring 'g'* report?
- 11% It was higher than I expected.
 - 43% It was lower than I expected.
 - 38% It was about what I expected.
 - 7% I didn't hand in a *Measuring 'g'* report.

Other Stuff

Here are some questions about technology used in your courses here at WLU.

58. Have you used a “clicker” for any course?
- 55% Yes, and I enjoyed it.
 - 16% Yes, but I didn't enjoy it.
 - 18% No, but I'd be curious to try it.
 - 5% No, and I'd rather not.
 - 6% I have no idea what a “clicker” is.
59. Have you taken any course where work had to be submitted to *turnitin.com*?
- 27% Yes, and I thought it was a good idea.
 - 20% Yes, but I didn't think it was a good idea.
 - 20% No, but I think it is a good idea.
 - 9% No, and I don't think it is a good idea.
 - 25% I have no idea what *turnitin.com* is.

60. In most of your courses, which of the following do you find *most* useful for helping you learn?

20% attending lectures

14% reading the textbook

19% reading the instructor's lecture notes if available

2% attending tutorials

44% What works best depends very much on the course and the instructor.

61. In your courses where there isn't a quiz or attendance taken in lectures, what percentage of lectures do you attend?

8% less than 25 %

5% between 25 % and 50 %

15% between 50 % and 75 %

60% more than 75 %

13% It depends very much on the course and the instructor.

62. What do you think about course evaluations, like this and others?

11% I think they are mostly propaganda, but don't really have any effect.

20% I think they are only worthwhile if students get to see the results.

22% I think they probably have some effect most of the time.

35% I think some instructors pay a lot of attention to them, but some don't.

13% It doesn't really matter to me since I'm done the course when I do an evaluation.

Have a great holiday and see you next term!