PC/CP120 Introduction to Digital Electronics
Lab Evaluation Results
Wilfrid Laurier University

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This evaluation for the purpose of evaluating my teaching methods and your impressions of the labs. It is anonymous and you can omit any question(s) you don't wish to answer.

Labs in this Course

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

General

1. I am taking this course because

26% it is required for my program, and I won't take any more electronics than I have to.

56% it is required for my program, but I like electronics.

4% it fulfills a science requirement, and is a personal interest.

13% it is not required for my program, but is a personal interest.

2. The lab web page was

41% organized and easy to follow

24% better than having a printed lab manual

26% both of the above

7% neither of the above

3. The lab *demonstrator* was

32% helpful in the lab.

12% knowledgeable about the lab.

54% both knowledgeable and helpful.

1% neither knowledgeable nor helpful.

4. The lab marking

51% was fair.

3% included helpful feedback.

44% was both fair and helpful.

0% was neither fair nor helpful.

5. Observing the lab demonstrator in this course has made me

26% consider applying to become a demonstrator for this course

9% consider applying to become a demonstrator but not for this course

7% less likely to become a lab demonstrator for this course

1% less likely to become a lab demonstrator for this or any other course

56% It has had no effect on my attitudes about lab demonstrating

6. The lab *supervisor* (ie. Terry) was

24% helpful in the lab.

19% knowledgeable about the lab.

56% both knowledgeable and helpful.

1% neither knowledgeable nor helpful.

7. 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.?)

69% very

29% fairly

1% not much

0% awful

8. Being required to demonstrate things in the lab was

28% useful to summarize important sections of each lab

22% a good way to have part of the lab mark assigned

49% both of the above

1% neither of the above

9. The *sequence* of the labs was

76% useful because over time we were exposed to several different things (breadboards, keypads, LEDs, etc.)

7% less useful than if each week's circuit would have been needed for the following week's lab

16% Either of the above would have been equally effective.

Blended Learning

These labs used a *blended learning* approach, where you watched videos or read documents *before* the labs, and then did a quiz prior to the lab to prepare you for the lab. The following questions refer to this way of doing labs.

10. Have you heard of or experienced blended learning before?

34% Yes, I have other courses doing it (or have had them previously).

16% Yes, I've heard of it, but never done it other than this.

50% No, I've never heard of it.

11. Did preparing for the lab ahead of time help you in the lab?

37% Yes, it saved time in the lab.

22% Yes, it helped me understand what to do in the lab.

25% both of the above

16% neither of the above

12. Did the online quiz help you understand the important points?

25% Yes; answering the questions clarified what was important.

18% Yes; correcting my mistakes in the quiz helped me remember.

16% both of the above

41% neither of the above

13. Including reading documents or watching videos and doing the online quizzes, about how long did you spend each week preparing for the lab?

47% Less than 15 minutes

29% Between 15 minutes and 1/2 hour

15% Between 1/2 hour and 1 hour

4% More than 1 hour

4% It varied greatly, from a few minutes to more than 1/2 hour.

Topics

14. After reading and *following data sheets* in these labs,

69% I feel pretty confident in doing that from now on.

19% I could do what I had to do in the labs again, but I'm not sure I could do it well for other things.

9% I don't think I could do it like I did in the lab without following the lab instructions again.

3% I was never really clear on how to do it in the lab.

15. After using the *breadboard* in these labs,

84% I feel pretty confident in using it from now on.

13% I could do what I had to do in the labs again, but I'm not sure I could use it well for other things.

3% I don't think I could use it like I did in the lab without following the lab instructions again.

0% I was never really clear on how to use it in the lab.

16. After using the *debugger board* in these labs,

75% I feel pretty confident in using it from now on.

22% I could do what I had to do in the labs again, but I'm not sure I could use it well for other things.

1% I don't think I could use it like I did in the lab without following the lab instructions again.

1% I was never really clear on how to use it in the lab.

17. After using *Quartus II* in these labs,

54% I feel pretty confident in using it from now on.

35% I could do what I had to do in the labs again, but I'm not sure I could use it well for other things.

9% I don't think I could use it like I did in the lab without following the lab instructions again.

1% I was never really clear on how to use it in the lab.

18. After using *CPLDs* in these labs,

74% I feel pretty confident in using them from now on.

16% I could do what I had to do in the labs again, but I'm not sure I could use them well for other things.

10% I don't think I could use them like I did in the lab without following the lab instructions again.

0% I was never really clear on how to use them in the lab.

19. Many topics in the lab had written explanations on the web page as well as videos or screencasts. Which of these did you find more useful most of the time?

35% I found the written explanations much more useful.

22% I found the videos much more useful.

22% I found them both about equally useful (or it depended on the topic).

18% I hardly ever watched the videos; I usually just read the explanations on the web page.

3% I hardly ever read the explanations on the web page; I just watched the videos.

For the following questions, use the following scale to indicate how much you agree with the statement that you feel comfortable with the devices in question:

(a) disagree strongly

(b) disagree

(c) neither agree nor disagree

(d) agree

(e) agree strongly

20. (**12% 15% 12% 37%25%**) I feel comfortable using *resistor arrays*.

21. (**15% 7% 15% 19%44%**) I feel comfortable using *DIP switches*.

22. (**10% 22% 19% 24%25%**) I feel comfortable using *keypads*.

23. (**7% 19% 21% 18%35%**) I feel comfortable using *pushbutton switches*.

24. (**15% 10% 10% 24%41%**) I feel comfortable using *individual LEDs*.

25. (**10% 12% 9% 21%48%**) I feel comfortable using *bargraph LEDs*.

26. (**12% 13% 21% 19%35%**) I feel comfortable using *7 segment LED displays*.

27. The labs were

29% a good *complement to* the lectures

18% a good *reinforcement of* the lectures

32% both of the above

19% pretty disconnected from the lectures and not much use

1% Both the labs and the lectures seemed pretty useless.

Project

28. Compared to the other labs, I thought the project was

78% more interesting than regular labs

7% less work than 2 or 3 more labs

13% Both of the above are true.

1% Neither of the above are true.

29. When doing *Phase I* of the project; (i.e. description, inputs and outputs)

87% I found the sample on the website really helpful

6% I looked at the sample, but it didn't help much.

6% I didn't need the sample.

30. When doing *Phase II* of the project; (i.e. logic equations)

90% I found the sample on the website really helpful

7% I looked at the sample, but it didn't help much.

1% I didn't need the sample.

31. When doing *Phase III* of the project; (i.e. drawing and simulation)

90% I found the sample on the website really helpful

4% I looked at the sample, but it didn't help much.

3% I didn't need the sample.

32. When doing *Phase IV* of the project; (i.e. poster and prototype)

71% I found the samples really helpful

18% I looked at the samples, but they didn't help much.

10% I didn't need the samples.

33. The marking checklists for the project phases

81% were concise and made expectations consistent

18% were concise but did not make expectations consistent

1% made expectations consistent but were not concise

0% were not concise and did not make expectations consistent

34. Pick whichever fits.

34% The project improved my understanding of digital design.

16% The project improved my wiring and debugging skills.

49% Both of the above are true.

1% Neither of the above are true.

35. Designing, drawing and simulating the circuit for the project and then producing the working prototype

44% made me see how the whole process fit together

18% helped me have confidence that I could do the same in the future

37% both of the above

1% was unnecessary; the labs and assignments in the course covered all of the same stuff

0% was a waste of time; I didn't really understand it at all

36. The project *poster* was

35% useful to summarize the work involved in the project

12% a good way to assign part of the project mark

29% both of the above

24% neither of the above

37. The project *demonstration* was

46% useful because it showed the project circuit in operation

12% a good way to assign part of the project mark

32% both of the above

10% neither of the above

38. How did you feel about evaluating other students' projects? (Pick whichever fits best.)

28% It helped me pay attention to what makes a good project.

22% I liked the chance to indicate whether people did a good job or slacked off.

29% Both of the above are true.

21% I was uncomfortable evaluating other students.

39. How did you feel about other students evaluating *your* project? (Pick whichever fits best.)

10% I didn't like it; people would just mark based on whether the presenter was a friend or not.

35% I liked it; I think students will sometimes judge more fairly than instructors and it wasn't just one person making the evaluation.

32% I didn't like it; I don't think students have consistent or realistic expectations.

22% I don't care how it's done.

40. The rubric for marking final projects had descriptions of *poor*, *average*, and *excellent* examples of each of the criteria. How helpful was that?

43% I found it quite helpful for all of the criteria.

35% I found it quite helpful for most of the criteria.

9% I found it helpful for a few of the criteria.

4% I read it, but it wasn't really helpful; I never had a clear idea of the distinctions.

9% I didn't look at it; I didn't find it necessary.

Overall Impressions

41. If someone was thinking of taking this course as an elective, you'd tell them

- **44%** the labs make it more fun
- **6%** the labs make everything seem more 'real'
- **44%** Both of the above are true
- **3%** the labs make it a lot more difficult
- **3%** the labs don't really make much difference

42. The amount of *work required* for the labs was

- **7%** *much* more than for the PC131 or PC141 labs
- **6%** more than for the PC131 or PC141 labs
- **31%** about the same as for the PC131 or PC141 labs *or* I didn't do PC131 or PC141 labs
- **24%** less than for the PC131 or PC141 labs
- **31%** *much* less than for the PC131 or PC141 labs

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

- **37%** *much* more than for the PC131 or PC141 labs
- **28%** more than for the PC131 or PC141 labs
- **28%** about the same as for the PC131 or PC141 labs *or* I didn't do PC131 or PC141 labs
- **4%** less than for the PC131 or PC141 labs
- **1%** *much* less than for the PC131 or PC141 labs

44. Pick the answer that best describes your feelings:

81% I look forward to doing more electronics labs in the future, if they're similar to these.

6% I dread doing more electronics labs in the future, if they're similar to these.

10% I don't expect to do any more electronics labs, so what I thought of these doesn't matter for the future.

3% I think the labs in different courses will be different enough that I can't base my expectations for future electronics labs on these.

45. **In order to improve teaching beyond my own courses, I'd like to be able to share the results of these evaluations with other instructors, students, etc. May I have your permission to do that?**

87% **Yes, I'd be glad if any improvement could come from this.**

13% **Yes, this is anonymous enough that I don't mind how the results are used.**

0% **No, this isn't anonymous enough for me to be comfortable with the results being shared.**

0% **No, even though this is anonymous I don't want the results to be shared.**