B EE 425 AA
Microprocessor System Design
Course type: Face-to-Face

Taught by: Nicole Hamilton
Instructor Evaluated: Nicole Hamilton-Lecturer

Evaluation Delivery: Online
Evaluation Form: H
Responses: 18/22 (82% very high)

Overall Summative Rating represents the combined responses of students to the four global summative items and is presented to provide an overall index of the class's quality:

Median	College Decile
3.6	**2**
(0=lowest; 5=highest)	(0=lowest; 9=highest)

Challenge and Engagement Index (CEI) combines student responses to several *IASystem* items relating to how academically challenging students found the course to be and how engaged they were:

CEI: 5.7
(1=lowest; 7=highest)

SUMMATIVE ITEMS

	N	Excellent (5)	Very Good (4)	Good (3)	Fair (2)	Poor (1)	Very Poor (0)	Median	DECILE RANK Inst	DECILE RANK College
The lab section as a whole was:	18	11%	44%	22%	11%	11%		3.6	2	2
The content of the lab section was:	18	11%	22%	39%	11%	17%		3.1	0	0
The lab instructor's contribution to the course was:	18	39%	28%	11%	22%			4.1	3	4
The lab instructor's effectiveness in teaching the subject matter was:	18	17%	44%	11%	17%	6%	6%	3.8	2	3

STUDENT ENGAGEMENT

Relative to other college courses you have taken:	N	Much Higher (7)	(6)	(5)	Average (4)	(3)	(2)	Much Lower (1)	Median	DECILE RANK Inst	DECILE RANK College
Do you expect your grade in this course to be:	18	6%	44%	17%	28%	6%			5.5	5	7
The intellectual challenge presented was:	18	11%	61%	11%	11%		6%		5.9	6	5
The amount of effort you put into this course was:	18	28%	44%	11%	11%	6%			6.0	7	7
The amount of effort to succeed in this course was:	18	17%	61%	11%	6%	6%			6.0	6	5
Your involvement in course (doing assignments, attending classes, etc.) was:	18	28%	39%	17%	17%				5.9	5	5

On average, how many hours per week have you spent on this course, including attending classes, doing readings, reviewing notes, writing papers and any other course related work?

Class median: 6.9 (N=17)

Under 2	2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-17	18-19	20-21	22 or more
	6%	24%	29%	18%	12%	6%		6%			

From the total average hours above, how many do you consider were valuable in advancing your education?

Class median: 4.5 (N=17)

Under 2	2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-17	18-19	20-21	22 or more
6%	24%	41%	6%	12%	12%						

What grade do you expect in this course?

Class median: 3.4 (N=17)

A (3.9-4.0)	A- (3.5-3.8)	B+ (3.2-3.4)	B (2.9-3.1)	B- (2.5-2.8)	C+ (2.2-2.4)	C (1.9-2.1)	C- (1.5-1.8)	D+ (1.2-1.4)	D (0.9-1.1)	D- (0.7-0.8)	E (0.0)	Pass	Credit	No Credit
29%	18%	29%	18%			6%								

In regard to your academic program, is this course best described as:

(N=17)

In your major	A core/distribution requirement	An elective	In your minor	A program requirement	Other
100%					

STANDARD FORMATIVE ITEMS

	N	Excellent (5)	Very Good (4)	Good (3)	Fair (2)	Poor (1)	Very Poor (0)	Median	DECILE RANK Inst	DECILE RANK College
Explanations by the lab instructor were:	18	17%	44%	11%	22%	6%		3.8	2	3
Lab instructor's preparedness for lab sessions was:	18	22%	28%	22%	17%	6%	6%	3.5	1	3
Quality of questions or problems raised by the lab instructor was:	18	22%	33%	17%	17%	11%		3.7	1	2
Lab instructor's enthusiasm was:	18	44%	28%	17%	11%			4.3	2	3
Student confidence in lab instructor's knowledge was:	18	44%	22%	28%		6%		4.2	2	3
Lab instructor's ability to solve unexpected problems was:	18	28%	28%	17%	17%	6%	6%	3.7	2	3
Answers to student questions were:	18	17%	39%	17%	22%		6%	3.6	1	2
Interest level of lab sessions was:	18	17%	44%	17%	6%	11%	6%	3.8	3	4
Communication and enforcement of safety procedures were:	18	22%	39%	17%	6%	11%	6%	3.8	1	4
Lab instructor's ability to deal with student difficulties was:	18	28%	17%	22%	28%	6%		3.2	1	1
Availability of extra help when needed was:	18	28%	33%	17%	11%	6%	6%	3.8	2	2
Use of lab section time was:	18	22%	39%	22%	11%	6%		3.8	2	3
Lab instructor's interest in whether students learned was:	18	33%	28%	22%	11%	6%		3.9	2	2
Amount you learned in the lab sections was:	18	11%	44%	17%	11%	17%		3.6	2	2
Relevance and usefulness of lab section content were:	18	11%	44%	22%	6%	11%	6%	3.6	1	1
Coordination between lectures and lab activities was:	18	6%	22%	22%	11%	22%	17%	2.5	0	0
Reasonableness of assigned work for lab section was:	18	22%	44%	11%	17%	6%		3.9	3	3
Clarity of student responsibilities and requirements was:	18	22%	28%	28%	17%	6%		3.5	1	2

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STANDARD OPEN-ENDED QUESTIONS

Was this class intellectually stimulating? Did it stretch your thinking? Why or why not?

1. The labs were engaging and the topics being presented were new and took some time to understand the outcome that was supposed to occur.

2. This class was intellectually stimulating. It provided an in-depth, hands-on exploration of digital logic and microprocessor instruction set architecture that wouldn't have been able to be taught as effectively in the lecture portion of the class.

3. Yes, very intellectually stimulating, and it stretched my thinking. The lab section had a heavy focus on coding, and it required thinking like a programmer in order to complete the assignments.

4. Yes.

5. This class was difficult, but not in the right way. I appreciate classes that are difficult in a targeted, well-planned way that encourages me to rise to the challenge. That was not the case for this class. Since the lectures and labs were designed by Professor Berger, but he was not there to explain his slides or experiments, we had a very hard time understanding what we were supposed to do. The labs written by Professor Berger were nearly impossible, since we did not receive adequate instruction during lectures. The labs written by Professor Hamilton were interesting and engaging, but unfortunately she did not have enough time to prepare us for them (this was not Professor Hamilton's fault in any way, but the fault of the EE program that we did not learn enough Verilog in EE 271). The labs were difficult because we were uninformed, and we wasted a lot of time trying to understand the requirements rather than actually learning anything.

6. Yes, this lab was interesting. I felt like I learned a practical skill and accomplished a real-world problem with the keyboard scanner. The part that sucked were the first two labs (that have been historically used in 425). They are cryptic pieces of drivel. Seriously, at one point while reading through the second lab, the author trailed off on a little digression about "spending rainy Saturdays at the local electronic stores". Is that necessary in an EE lab?

7. It was not intellectually stimulating, because it felt like it wasn't relevant to what I will be seeing in the real world.

8. The labs are very different than what I have had in the past so having to go through machine language and relearn Verilog definitely made me think!

9. I thought the first lab was interesting but when the second lab came along, we asked if our results were correct but she did not know and told us to just submit whatever we had because it wasn't a lab she wrote.

10. Na

11. The later labs were good, and the early labs were a valuable experience, but they were far more confusing.

12. It was a good Verilog coding experience

13. The hardest class I took so far for my major.

14. Yes, real problem was solved in the lab

What aspects of this class contributed most to your learning?

1. Aspects of the lab that contributed to my learning was engaging with the actual code in lab and becoming more familiar with verilog.

2. The instructors step by step instructions and clear goals for each lab experiment facilitated learning and accomplishing goals in this lab section.

3. The instructors willingness to be involved in helping students solve problems.

4. Lab tech and classmates.

5. Professor Hamilton's reviews of the lecture material were EXTREMELY helpful and really added to my understanding of this class. She was clearly an expert in the subject matter, and I really enjoyed talking with her about microprocessors and assembly language. She had a lot of expertise and advice to share, and her enthusiasm was clear and contagious.

6. Nicole's explanations were crystal clear. Her briefings at the start of the lab section were insightful and helpful. When it came to labs that she wrote, she could explain and solve problems quickly that related to the lab. The bits of professional advice about the work world or the practicality of the subject matter was nice, too. The third and final lab was the best. We actually exercised a useful skill: verilog.

7. I was very disappointed with the whole 425 lab experience this quarter.

8. Going at my own pace (with my partner). At the beginning it was a little stressful knowing Nicole hadn't done any of the labs and the fact that she was able to be flexible was very helpful in the way that we could do the labs and take the extra time actually understand them (if we couldn't get help from her). Having an alternative for the last lab (so we could get help from her and from each other) was very helpful in my learning.

9. Help between different lab teams.

10. na

11. The instructor helped us a lot more on the later labs, which helped clarify some of the problems.

12. You are full of passion

13. The materials and final project are useful and great experience.

14. programming part

What aspects of this class detracted from your learning?

1. It was hard to understand what was needed from the first two labs (except the alternative) because the lab instructions were from another class. If questions were raised it was unfortunate the instructor could not fully answer them. Also most of the lab instructions were pointless from the labs before since it was extra material.

2. The lack of sufficient organization of lab projects at the beginning of the quarter detracted from learning and making progress in the first couple of weeks of this quarter.

3. I have very little experience with the programming language used for the labs.

4. Instructor can not help students very well.

5. Overall, I think Professor Hamilton made the best of a very bad situation when she attempted to rescue this pitifully mismanaged class. Professor Berger's labs made almost no sense without him there to explain what he wanted us to do. Even if we eventually figured out the requirements, the labs took a ridiculous amount of time because first had to teach ourselves all the material that we were not taught in lecture. Professor Hamilton's labs were interesting and well-explained, but unfortunately we did not have enough background in Verilog to be able to complete them in a reasonable amount of time. Professor Hamilton went above and beyond by holding extra office hours, but it was still not enough time for us to learn what we needed to in order to complete her projects.

6. The first two labs. Come on...the Z80? That thing came out in 1976. That was 39 years ago. Couldn't we study something a little more current/worth while? I wish we could have canned the first two labs and spent the whole lab time learning Verilog and doing exercises in verilog.

7. Nicole was unprepared with lab assignments. She posted the assignments very late, which didn't give us a lot of time to work on them. Nicole was unwilling to assist students if they chose Dr. Berger's lab, and she belittled Dr. Berger's choice of class and lab material.

8. The first two labs when she hadn't gone through them and couldn't provide the most help.

9. I thought the design project was irrelevant to the class in general because B EE 271 did the same lab.

10. na

11. The early labs were very disorganized.

12. The first two labs.....but I cannot blame you

13. Summer quarter is short, hard to learn everything in 8 weeks.

14. the time we put on the labs

What suggestions do you have for improving the class?

1. I can't say much since it was the instructors first time teaching the course. If possible I would just say recreate the labs that were presented.

2. The class would benefit if the instructor prepares her own entire set of laboratory experiments rather than using some legacy experiments from other professors that had taught the course previously to better suit her style of teaching the course.

3. provide some explanation of the fundamental concepts needed to complete the labs. Possibly as handouts or electronic files. There is a lot to learn about Verilog, so it would be helpful to have had list of fundamental concepts relating to the labs as a starting point for learning the language.

4. Instructor should prepare for lab instead of throwing in labs from her other class.

5. Although Professor Hamilton is clearly very knowledgeable, sometimes it is extremely frustrating to talk with her because she does not listen very carefully. She assumes she knows what I have to say and does not need to hear me say it. Sometimes I have a question that I know she can answer, but she talks about something unrelated because she doesn't have the patience to listen to me explain my problem. Overall I really respect Professor Hamilton and I think she's doing a wonderful thing by revising the EE 271 and EE 425 curriculum to contain more Verilog. However, she should realize that this revision will make for a lot of confused students who need a lot of her help to get up-to-speed. I think she got frustrated by how many questions we had on the final design project, and she refused to take the time to understand our bugs. I'm sorry for her that the student world is not as fast-paced as the tech world she comes from. If she could only slow down enough to actually impart some of her knowledge to us, we could all be a lot more successful.

6. Bring the focus of the labs around a useful skill like programming in verilog! I am going to take away from 425 with a very, very choppy understanding of microprocessors, but the lab instructor is not to blame. The issue is that the inherent, historic objective of this course has not been meant to arm students with a practical skill (like programming the ARM processor with verilog). While on the eventual job-hunt, claiming experience with programming an Arduino and writing z80 assembly code would be rather...lackluster...

7. I recommend that Nicole refrain from making sexual remarks to young male students. She asked a young male student if he was in need of a sexual education. Couldn't believe my ears. Also, Nicole doesn't require a good lab report. She didn't require a lab report at all for the final project. I don't mind not doing the work, but that's not preparing the student for the real world. I feel like she does this to gain favor with the students. I believe Nicole is very smart in her expertise, but she really needs to be more professional.

8. Maybe a better structure going into it next time if projects are figured out better since we've all been through it!

10. na

11. I think it goes without saying that the early labs need to be replaced with something more fitting with the rest.

12. I am not sure if learning 68k in lecture while coding in Verilog is a good idea. Good luck, anyways :)

13. Assign a good textbook that we can do the reading because too much source online for research and we are not sure which is the good one out there.

14. I think it was excellent!

IASystem Course Summary Reports summarize student ratings of a particular course or combination of courses. They provide a rich perspective on student views by reporting responses in three ways: as frequency distributions, average ratings, and either comparative or adjusted ratings. Remember in interpreting results that it is important to keep in mind the number of students who evaluated the course relative to the total course enrollment as shown on the upper right-hand corner of the report.

Frequency distributions. The percentage of students who selected each response choice is displayed for each item. Percentages are based on the number of students who answered the respective item rather than the number of students who evaluated the course because individual item response is optional.

Median ratings. *IASystem* reports average ratings in the form of item medians. Although means are a more familiar type of average than medians, they are less accurate in summarizing student ratings. This is because ratings distributions tend to be strongly skewed. That is, most of the ratings are at the high end of the scale and trail off to the low end.

The median indicates the point on the rating scale at which half of the students selected higher ratings, and half selected lower. Medians are computed to one decimal place by interpolation.[1] In general, higher medians reflect more favorable ratings. To interpret median ratings, compare the value of each median to the respective response scale: *Very Poor, Poor, Fair, Good, Very Good, Excellent (0-5); Never/None/Much Lower, About Half/Average, Always/Great/Much Higher (1-7); Slight, Moderate, Considerable, Extensive (1-4).*

Comparative ratings. *IASystem* provides a normative comparison for each item by reporting the decile rank of the item median. Decile ranks compare the median rating of a particular item to ratings of the same item over the previous two academic years in all classes at the institution and within the college, school, or division. Decile ranks are shown only for items with sufficient normative data.

Decile ranks range from 0 (lowest) to 9 (highest). For all items, higher medians yield higher decile ranks. The 0 decile rank indicates an item median in the lowest 10% of all scores. A decile rank of 1 indicates a median above the bottom 10% and below the top 80%. A decile rank of 9 indicates a median in the top 10% of all scores. Because average ratings tend to be high, a rating of "good" or "average" may have a low decile rank.

Adjusted ratings. Research has shown that student ratings may be somewhat influenced by factors such as class size, expected grade, and reason for enrollment. To correct for this, *IASystem* reports **adjusted medians** for summative items (items #1-4 and their combined global rating) based on regression analyses of ratings over the previous two academic years in all classes at the respective institution. If large classes at the institution tend to be rated lower than small classes, for example, the adjusted medians for large classes will be slightly higher than their unadjusted medians.

When adjusted ratings are displayed for summative items, **relative rank** is displayed for the more specific (formative) items. Rankings serve as a guide in directing instructional improvement efforts. The top ranked items (1, 2, 3, etc.) represent areas that are going well from a student perspective; whereas the bottom ranked items (18, 17, 16, etc.) represent areas in which the instructor may want to make changes. Relative ranks are computed by first standardizing each item (subtracting the overall institutional average from the item rating for the particular course, then dividing by the standard deviation of the ratings across all courses) and then ranking those standardized scores.

Challenge and Engagement Index (CEI). Several *IASystem* items ask students how academically challenging they found the course to be. *IASystem* calculates the average of these items and reports them as a single index. *The Challenge and Engagement Index (CEI)* correlates only modestly with the global rating (median of items 1-4).

Optional Items. Student responses to instructor-supplied items are summarized at the end of the evaluation report. Median responses should be interpreted in light of the specific item text and response scale used (response values 1-6 on paper evaluation forms).

[1] For the specific method, see, for example, Guilford, J.P. (1965). Fundamental statistics in psychology and education. New York: McGraw-Hill Book Company, pp. 49-53.