

B EE 271 A  
Digital Circuits And Systems  
Course type: Face-to-Face

Evaluation Delivery: Online  
Evaluation Form: A  
Responses: 24/46 (52% high)

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

**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:

<b>Median</b>	<b>College Decile</b>
<b>4.7</b>	<b>9</b>
(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:

<b>CEI: 6.0</b>
(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	College
The course as a whole was:	24	50%	38%		12%			4.5	6	8
The course content was:	24	67%	21%	4%	8%			4.8	8	9
The instructor's contribution to the course was:	24	79%	12%	4%		4%		4.9	8	9
The instructor's effectiveness in teaching the subject matter was:	24	67%	8%	17%		8%		4.8	7	8

### STUDENT ENGAGEMENT

<b>Relative to other college courses you have taken:</b>	N	Much Higher (7)	(6)	(5)	Average (4)	(3)	(2)	Much Lower (1)	Median	DECILE RANK Inst	College
Do you expect your grade in this course to be:	24	17%	25%	25%	33%				5.2	4	5
The intellectual challenge presented was:	24	50%	42%	4%	4%				6.5	9	9
The amount of effort you put into this course was:	24	46%	38%	8%	8%				6.4	8	8
The amount of effort to succeed in this course was:	24	38%	46%	12%	4%				6.2	8	7
Your involvement in course (doing assignments, attending classes, etc.) was:	24	46%	29%	12%	8%	4%			6.4	8	8

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: 9.8 Hours per credit: 2 (N=24)**

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
		12%	8%	25%	25%	17%		8%	4%		

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

**Class median: 8.2 Hours per credit: 1.6 (N=24)**

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
4%		12%	25%	25%	12%	12%	4%		4%		

What grade do you expect in this course?

**Class median: 3.4 (N=24)**

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
25%	21%	33%		12%		8%								

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

**(N=24)**

In your major	A core/distribution requirement	An elective	In your minor	A program requirement	Other
88%	12%				

**STANDARD FORMATIVE ITEMS**

	N	Excellent (5)	Very Good (4)	Good (3)	Fair (2)	Poor (1)	Very Poor (0)	Median	DECILE RANK	
									Inst	College
Course organization was:	24	46%	38%	8%	8%			4.4	6	8
Clarity of instructor's voice was:	24	71%	17%	8%		4%		4.8	7	
Explanations by instructor were:	24	58%	12%	17%	4%	8%		4.6	7	8
Instructor's ability to present alternative explanations when needed was:	24	67%	17%	8%	4%	4%		4.8	8	8
Instructor's use of examples and illustrations was:	24	58%	21%	4%	8%	8%		4.6	6	7
Quality of questions or problems raised by the instructor was:	24	50%	29%	12%	4%	4%		4.5	6	7
Student confidence in instructor's knowledge was:	23	78%	13%		9%			4.9	8	8
Instructor's enthusiasm was:	24	83%	12%		4%			4.9	8	8
Encouragement given students to express themselves was:	24	75%	21%			4%		4.8	7	
Answers to student questions were:	24	67%	17%	12%		4%		4.8	7	9
Availability of extra help when needed was:	24	75%	21%	4%				4.8	8	9
Use of class time was:	24	54%	25%	17%	4%			4.6	7	8
Instructor's interest in whether students learned was:	23	83%	4%	4%	9%			4.9	8	9
Amount you learned in the course was:	24	54%	21%	12%	8%	4%		4.6	7	8
Relevance and usefulness of course content were:	24	62%	25%	4%	4%	4%		4.7	7	8
Evaluative and grading techniques (tests, papers, projects, etc.) were:	24	62%	8%	21%	8%			4.7	7	9
Reasonableness of assigned work was:	24	58%	21%	8%	12%			4.6	7	8
Clarity of student responsibilities and requirements was:	24	62%	17%	8%	8%	4%		4.7	7	8

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### STANDARD OPEN-ENDED QUESTIONS

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

1. This class intellectually stimulating. Very much so, learning a new coding language....
2. Yes it was. It taught me to think abstractly about digital design
3. Coming from a strictly analog background, this class was extremely interesting. I learned a tremendous amount, although any time you explore a new topic it challenges you.
4. Yes, I do think so. It explains the fundamental knowledge of logic design which is very useful in future circuit design.
5. The class was intellectually stimulating.
6. I now know more about digital systems.
7. NA
8. Yes, the labs as a supplement to the coursework was extremely beneficial in overall learning. I loved the project theme as opposed to a dry lab report, and Nicole is a super star of a teacher in guiding the class as well as in the EE lab.
10. I enjoyed taking this class. It was challenging from day one; we had to hit the ground running to keep up with the course material, but once we got going it was easy to keep up.
11. Yes, boolean algebra and systems are much more complex than one would think.
12. Definitely a great experience, challenging subject with many different approaches to each facet.
13. Nicole's ability to help the students understand the material is one of the reasons the class is stimulating.
14. This class was not what I expected. I enjoyed that it was emphasized that this was not so much a programming class; we were constantly reminded that Verilog is used as notation (for circuits) rather than a programming language. The class used concepts (of logic) that were somewhat familiar but also expanded on them and tied them to electrical engineering.
15. This class was difficult. I had to teach myself much of the content because I did not understand the teachers explanations.
16. Yes, It was very difficult to understand a lot of the concepts that were introduced in this class. If there were more in class examples I believe that a lot of this material would be easier to understand.
17. Yes, how logic design and gates work starts out intuitive but quickly becomes complicated and new skills need to be developed to make it manageable.
18. Yes, the concepts/topics presented were sometimes very difficult to grasp at first.
19. yes, it was learning a new language. This was challenging and forced me to pick up on a new skill.
20. Usability of tools learnt from the class.

#### What aspects of this class contributed most to your learning?

1. The homework. The in class discussions also helped.
2. Lectures and homework
3. The lectures were amazing. Nicole seems to possess a inherent ability to teach effectively. It's also obvious that she's incredibly knowledgable in the subject area. At least that's my opinion. Ideas are not glossed over and often revisited, so you're given plenty of time to understand or ask questions. She does an excellent job of presenting alternative view points or elaborating on concepts, which tend to answer 'unasked' questions. She's also very good at making sure students questions are understood and answered in thoroughly and in-depth.
4. PPT and other handwriting stuff.
5. The lecturer was quite effective.
6. Surprisingly, lecture was very much my worth time. Usually it's not, usually I can just sit at home and read the book and get just as much. Instructor never painted explanations to be black and white, if someone didn't understand something it became, "what is it that you don't understand that I can explain differently so you can understand?"
7. NA
8. Nicole is perhaps one of the most effective communicators I have ever had the privilege of being taught by, her willingness to dedicate incredible amounts of time to students was all the help needed to be successful.
9. real life scenarios presented in class and working through the problems associated with them.
10. The labs were challenging, and required application of the techniques learned in class. The homework was enough to learn the material and prepare for the exams.
11. Doing actual problems like karnaugh maps and byte or adder problems.

12. The Instructor was easily one of the best instructors ive had. The repetition in slides (like a quick review of the previous lecture) really helps cement the concepts in.
13. Home works
14. Nicole was key to my learning in this class. Her lectures provide a wealth of content and works well with the textbook. She was always willing to help students understand concepts if they were confused, no matter how simple the concept may be.
15. The homework was helpful to use as a study guide
16. I would say that team work with other students in this class was one of the biggest reasons why I was able to succeed.
17. Hand drawn examples where you go through the logic were very useful.
18. Class exercises.
19. Doing in-class exercises. Solving problems. it gave me a hands on experience and then after going over it with the class to see how we could improve tackling problems.
20. Instructor examples.

#### What aspects of this class detracted from your learning?

1. The lack of homework and wanting us to copy directly off your lectures for the homework.
2. None
3. We had multiple snow days and holidays so I missed out on many labs and lectures.
5. Nothing
6. Not much, really. Sometimes I felt the questions that students asked in class could've been answered if they just opened the book, but everyone's learning at a different pace.
7. NA
8. None
10. Snow days got in the way of completing some of the labs.
11. Verilog. Verilog is not intuitive, and that's coming from a student who's taken all the required software classes in the EE program already. It's just not that easy to pick up. We are required to memorize how to write code in verilog for our exams, and I think that's fair to an extent. Some of the questions are much harder than others, it may be better just to ask the easier verilog questions, showing that the student knows the basics, not the advanced capability. This is simply because if we do not go into a digital logic field, we'll never use Verilog again.
12. lack of appropriate amounts of homework, by this i mean a steady amount of problems provided by the instructor to help the students gauge the teachers expectations(there is an enormous amount of material provided in the slides). Simply too much information in some lectures.
13. The labs.
14. The course and lectures felt a bit too fast paced a lot of the time, but I understand that is partly due to schedule of winter quarter.
15. Our first lab was on circuitry, and we were expected to know how alot of it worked, even though there are no EE prerequisites. Labs were difficult because asking the instructor for help resulted in well you have to figure it out or doing it herself without a good explanation.
16. I believe that a large amount of material was presented in the slides for the class but not a lot of the material was gone over very well. It would be nice if this material could of been taught in a slower manner instead of skipping slides that end up on tests.
18. None.
20. Lack of live demos of the labs by the instructor.

#### What suggestions do you have for improving the class?

1. Spend less time on previous content and spend more time on current content. I.e. spending ~25min - 30min going over the previous lecture and then spending the rest of the time on the new content. I would also give more homework focusing on the previous lecture, that way students have a better idea on what they need to study. Basically it would just break up your current homework templates in half.
2. More homework
3. None that come to mind.
4. I think the professor should rearrange the class schedule. Topics before the midterm are relatively easy, and she goes through those topics a little bit slower. I think she could lay more stress on topics after midterm, and explains more details during lecture.
5. Nothing
6. Usually I prefer having more examples worked in class, but the homework was thorough enough to prepare me for exams that I don't necessarily feel that way about this course.
7. NA
8. KEEP NICOLE HAMILTON AS THE INSTRUCTOR, she is amazing!!
10. Keep it going! I felt this class was intellectually challenging and well worth the effort.
11. Less Verilog work, it's really tough to understand. I think most students may be able to follow through a verilog code if going line by line, but asking to recreate or even develop their own code is really tough without years of experience.
12. Shorter more frequent homework, these can be through canvas for instance as to NOT increase the amount of grading the instructor has to do (auto grading).

14. I found at times that I wanted to follow along with slides a bit during lectures but couldn't as they were only provided afterward. This would've been helpful to mentally process slides when lectures felt too fast. Uploading the first version of the slides and then updating them post lecture would have been ideal for me, but at the same time I understand that it was also somewhat my fault for not stopping and asking questions sometimes.
15. Lab 1 felt extremely useless other than using gates. And the verilog labs need more basic explanations, like how inout works.
16. More in-class examples, so that when questions arise they can be asked.
17. Instead of making some of the harder homeworks worth nothing make them worth at least half credit, when I have a busy schedule it is much harder to motivate myself to do the optional assignments than if they are worth any points.
18. More class exercises.
19. I wasn't too confident in my verilog coding skills in lab so maybe something a little more focused in that area.
20. Include more demonstrations of code implementations.

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.<sup>1</sup> 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).

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<sup>1</sup> 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.