CS 3330-001 **Computer Architecture** - Spring 2015

ENGR (18273)

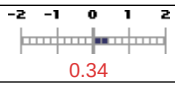
INSTRUCTORS: **Tychonievich, Luther (lat7h)**

Respondents: 31 / Enrollment: 76

Summary: CS 3330-001 Computer Architecture - Spring 2015 (18273)

Overall Course Rating

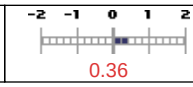
CS-3330-001 Mean 4.41
CS-3330-001 Std Dev 0.71
CS-3330-001 Response Count 155

Difference from Category Mean, Expressed in Category Standard Deviations	

SEAS, 3000-level courses Mean 4.08
SEAS, 3000-level courses Std Dev 0.96
SEAS, 3000-level courses Response Count 10042

Overall Instructor Rating

INSTRUCTOR: Tychonievich, Luther
Mean 4.54
Std Dev 0.64
Response Count 215

Difference from Category Mean, Expressed in Category Standard Deviations	

SEAS, 3000-level courses Mean 4.22
SEAS, 3000-level courses Std Dev 0.90
SEAS, 3000-level courses Response Count 16683

~ QUESTIONS AND DETAILS ~ | *~ ANSWER MATRICES ~*

1. This course taught me things I did not previously know

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Question Type: Likert
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contributed by Tychonievich, Luther (lat7h)

Results for CS-3330-001, Tychonievich, Luther

Total	Mean	Std Dev	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)
31	4.84	0.37	26 (83.87%)	5 (16.13%)	0 (0.00%)	0 (0.00%)	0 (0.00%)

Results for SEAS, 3000-level courses

Total	Mean	Std Dev	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)
31	4.84	0.37	26 (83.87%)	5 (16.13%)	0 (0.00%)	0 (0.00%)	0 (0.00%)

2. This course taught me things that have been and/or likely will be useful to me

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Question Type: Likert
~
contributed by Tychonievich, Luther (lat7h)

Results for CS-3330-001, Tychonievich, Luther

Total	Mean	Std Dev	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)
31	4.13	1.02	13 (41.94%)	13 (41.94%)	2 (6.45%)	2 (6.45%)	1 (3.23%)

Results for SEAS, 3000-level courses

Total	Mean	Std Dev	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)
31	4.13	1.02	13 (41.94%)	13 (41.94%)	2 (6.45%)	2 (6.45%)	1 (3.23%)

3. Which topic/lecture in this class do you think you will find the most useful in the future?

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Question Type: Short Answer
~
contributed by Tychonievich, Luther (lat7h)

Results for CS-3330-001, Tychonievich, Luther

Total	Individual Answers
29	*See below for Individual Results*

1. Code optimization 2. How the OS works (virtual memory)

The sections on optimizations will probably be the most useful, next will probably be the information about how numbers are stored and processed.

The portion on caches, memory management, virtual memory, and common mistakes will likely be the most useful for me in the future.

Speeding up code

Code optimization

Code optimization

I think that the optimization lectures will definitely be very useful in the future given that I believe it will apply to a lot of jobs in the future.

~ QUESTIONS AND DETAILS ~	~ ANSWER MATRICES ~
	Cache optimizations code optimization Optimizations and memory Basic function of underlying computer systems. Optimizing code, common memory mistakes, assembly code, and cache structure. optimization Caching Code/Cache optimization memory Optimizations Optimizations Optimizations Optimizations PIpelining/architecture optimizing code Cache architecture and code optimization Code optimization techniques, and how compilers work because that is what I will most likely use in a job setting. Optimizations Understanding assembly and pipelining Speed ups I can do within my code that will work well with the hardware Optimization Optimization The topic of code speedup
4. Which topic/lecture in this course was your favorite and why? ~ Question Type: Short Answer ~ *contributed by Tychonievich, Luther (lat7h)*	Results for CS-3330-001, Tychonievich, Luther Total: 27 Individual Answers: *See below for Individual Results*
	I liked the optimizations section. how computers understand numbers... it was interesting once I understood 1. Bit Fiddling - I like solving puzzles I liked the optimizations lab because I could see why what I was doing could be applied to things I'll do in the future. I also liked the bit manipulation topic. Pipe lining. It was just a fairly foreign concept and I felt I learned a lot. Caching and memory usage were very interesting to me because they are concepts that I had heard about but didn't know the details on. understanding how memory works reveals a lot about how computers work How all the different parts of the computer come together to accomplish monumental tasks! Optimizations Pipelining All the material was very interesting! Code/Cache optimization as I can see it being incredibly useful in various possible careers as well as the sense of accomplishment when achieving massive speed-up Binary numbers a bit shifts. The first homework was hard, but interesting once you got it figured out

~ QUESTIONS AND DETAILS ~	~ ANSWER MATRICES ~
	I was really engaged in the Cache lectures because Professor Tychonievich made it entertaining and clear. There was no particular topic/lecture that stood out to me as my favorite. But that is not to say that any of the topics/lectures were bad, just that there was nothing that I absolutely fell in love with and would call my favorite. virtual memory. I have never realized how virtual memory works although I heard about it before. It kinda lets me understand more about computer memory. pipelineing. Really opened my eyes to how instructions are actually executed. Caching The lecture on cache lookup as I honestly was most attentive that lecture so it is fresh in my mind. I didn't really have a favorite. Pipelining was fun to think about I like the sequential/pipeline topic. The progression was interesting Bit fiddling. They were puzzles, and puzzles are fun. I enjoyed using hcl2d. the Professor wrote it himself and it was nice to be able to use a new technology to explore sequential architecture and pipelining. Not one part, but the synthesis of having seen how a CPU works more or less, how caching and memory works, and how it could all fit together (with a few mysteries left). I felt weird being a CS major and having no clue how a computer actually worked. Now I have a general sense of how things work. I really enjoyed basically the entire last month of class the best. Lots of useful stuff and understanding what all those seg faults from 2150 really meant! Pipelining because it was very intuitive for me. Learning about cache architecture and memory really helped me understand a little bit what was going on in the lower level of a computer. luther doesn't believe in favorites, so this question would baffle him. anyways, i liked the stuff about caches/memory hierarchy/virtual memory Pipelining; I liked the visual diagrams of it
5. What lecture/topic(s) in this class "did not work" or were not seen as useful in the long run? ~ Question Type: Short Answer ~ *contributed by Tychonievich, Luther (lat7h)*	Results for CS-3330-001, Tychonievich, Luther Total: 25 Individual Answers: *See below for Individual Results*
	Bit shifting visualizing the memory mountain was confusing A lot of the memory topics towards the end - I see that this is important for Computer Scientists to know but I just don't feel like it enhanced my understanding that much. no IEEE floating point numbers Do we really have to learn the format of this? Virtual Memory could have been explained better with more of a concrete example (like the associated homework) If anything, learning about a hypothetical sequential processor seemed unnecessary, but I understand it was just a stepping stone. However, I'm not sure if many concepts from this class will be explicitly useful long term. The HCL code was difficult to grasp especially once the five stages were introduced and pipeline registers had to be used. I can't think of any lecture or topic that won't end up being useful in some way or another in the long run. No. Some of the material might not be entirely "useful", but I think it is important nonetheless. none

~ QUESTIONS AND DETAILS ~	~ ANSWER MATRICES ~
	I thought all lectures were interesting. It is tough as a current student to know what will be useful later on. It all seemed prett useful Bit fiddling did not like pipelining... can't imagine when i will ever need to apply that knowledge in the future writing our own pipeline The amount of time spent on pipelining I felt we spent too much time on processors. virtual memory. I do not think it was as clearly explained as the other topics, nor do I find it interesting or useful. I would rather lump it in with other OS topics in an OS course n/a I didn't like pipelining. It struck me as a waste of time. hcl stuff mainly because it was something specific to this course only (if it's used outside this course, it will almost certainly be in a different format) and even then it mostly a tool for other stuff (like understanding pipelining) Floating point discussions; didn't we already go over those in 2150....? I really do not understand bubbling and stalling. I think maybe a week less of pipelining in favor of the topics towards the end of the year would be good. I liked learning about how it worked, but I'm not I got any additional learning of concepts out of the homeworks after the 1st or 2nd one.
6. Any specific comments about the TAs you would like to share? ~ Question Type: Short Answer ~ *contributed by Tychonievich, Luther (lat7h)*	Results for CS-3330-001, Tychonievich, Luther Total: 19 Individual Answers: *See below for Individual Results*
	Jim and Molly are great The range in TA quality was very large. The undergrad TAs were significantly better than their graduate counterparts. Jim Roberts is awesome When I did go to the TA's (~5 times over the course of the semester) they were very helpful. My only complaint was that the TA's were very well aligned to help in the beginning of the week (since many of our assignments were due on Wednesday), but were poorly aligned when our assignments were due at the end of the week. This happened several times. no Weren't the greatest at explaining the labs. Jim was awesome/really helpful when I went to see him. The 6:30-7:45 lab female TA was pretty useless and not very friendly. The lab TAs often did not know what we were doing in lab, especially when we worked with HCL. Numerous times I asked for help and they would say they have no idea and tell me to Google it. That's not particularly helpful for a lab TA. Undergrad TAs Molly and Jim were super useful in OH and I went to those a ton since they helped a lot on harder homework assignments. TAs were phenomenal and REALLY helped me understand course material. Jim and Molly specifically were absolute rockstars. Went above and beyond to help students and stayed late when needed. Found the TAs in my specific lab (Wed 5pm) were unable to communicate ideas well. I love Molly and Jim! The grad TAs were sadly incompetent. The graduate TA's were not at all helpful during lab. A lot of times, they had no idea what the lab assignment was and didn't really care when we asked questions. They would just refer to online resources, and not explain things. Towards the end, I just stopped asking them questions because they were just very unhelpful. The undergrad TA's were amazing in helping for homework assignments.

~ QUESTIONS AND DETAILS ~	~ ANSWER MATRICES ~

The TA's in my lab section where completely useless and did not demonstrate that they had a grasp of computer architecture. On the other hand, the TA's who were not in my lab section were fantastic!

Jim is the man

They were awesome

Jim was SO helpful and really, really knows his stuff

The TAs were helpful both in and out of lab.

No.

Molly and Jim were great during office hours!

In lab: Very difficult to communicate with, generally unhelpful. Frequently unknowledgeable about the contents of the lab.

7. How often did you make use of the TA office hours?

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Question Type: Multiple Choice

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contributed by Tychonievich, Luther (lat7h)

Results for CS-3330-001, Tychonievich, Luther

Total	Every week (NA)	Every other week (NA)	Once per assignment (NA)	Rarely (NA)	Never (NA)
31	5 (16.13%)	2 (6.45%)	4 (12.90%)	12 (38.71%)	8 (25.81%)

Results for SEAS, 3000-level courses

Total	Every week (NA)	Every other week (NA)	Once per assignment (NA)	Rarely (NA)	Never (NA)
31	5 (16.13%)	2 (6.45%)	4 (12.90%)	12 (38.71%)	8 (25.81%)

8. How would you rate the helpfulness of the TAs?

~

Question Type: Likert

~

contributed by Tychonievich, Luther (lat7h)

Results for CS-3330-001, Tychonievich, Luther

Total	Mean	Std Dev	Excellent (4)	Good (3)	Average (2)	Weak (1)	Very Poor (0)
30	3.07	0.78	9 (30.00%)	15 (50.00%)	5 (16.67%)	1 (3.33%)	0 (0.00%)

Results for SEAS, 3000-level courses

Total	Mean	Std Dev	Excellent (4)	Good (3)	Average (2)	Weak (1)	Very Poor (0)
30	3.07	0.78	9 (30.00%)	15 (50.00%)	5 (16.67%)	1 (3.33%)	0 (0.00%)

9. How would you rate the availability of TAs?

~

Question Type: Likert

~

contributed by Tychonievich, Luther (lat7h)

Results for CS-3330-001, Tychonievich, Luther

Total	Mean	Std Dev	Excellent (4)	Good (3)	Average (2)	Weak (1)	Very Poor (0)
30	3.17	0.59	8 (26.67%)	19 (63.33%)	3 (10.00%)	0 (0.00%)	0 (0.00%)

Results for SEAS, 3000-level courses

Total	Mean	Std Dev	Excellent (4)	Good (3)	Average (2)	Weak (1)	Very Poor (0)
30	3.17	0.59	8 (26.67%)	19 (63.33%)	3 (10.00%)	0 (0.00%)	0 (0.00%)

10. What portion of course material do you think should have been included in a required course?

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Question Type: Multiple Choice

~

contributed by Tychonievich, Luther (lat7h)

Results for CS-3330-001, Tychonievich, Luther

Total	All (NA)	All but one or two topics (NA)	A majorty (NA)	About half (NA)	A minority (NA)	Only one or two topics (NA)	None (NA)
31	7 (22.58%)	16 (51.61%)	5 (16.13%)	2 (6.45%)	1 (3.23%)	0 (0.00%)	0 (0.00%)

Results for SEAS, 3000-level courses

Total	All (NA)	All but one or two topics (NA)	A majorty (NA)	About half (NA)	A minority (NA)	Only one or two topics (NA)	None (NA)
31	7 (22.58%)	16 (51.61%)	5 (16.13%)	2 (6.45%)	1 (3.23%)	0 (0.00%)	0 (0.00%)

~ QUESTIONS AND DETAILS ~	~ ANSWER MATRICES ~

11. What would you suggest we change about this course in the future?

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Question Type: Short Answer

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contributed by Tychonievich, Luther (lat7h)

Results for CS-3330-001, Tychonievich, Luther

Total	Individual Answers
21	*See below for Individual Results*

I was somewhat bummed that the answers to the practice tests for the first two were released yet for exam three they were not. I usually utilized the practice exam to focus my studying and thus without answers I was unsure whether I actually knew any material going into exam three. I would thus feel that either not releasing any practice answers all year or releasing them all would be better.

they're all useful topics to learn, but the textbook specific nature of some things, i'm not so sure about y86 and csapp's hcl for example

Spend more time on virtual memory. It was very rushed. The test questions on this topic were very difficult. Make the tests actually assess my knowledge. I wish we had done more practice for the types of questions asked on the final exam. I am upset that I knew the material but the final questions were too difficult. I am also upset about how the grades were decided.

focus less on numbers and bitfidding. two-complement and floats were not very applicable to the rest of the course material in the long run.

N/A

Not all topics had an associated lab. In fact, some labs were a) review for exam (where few would attend) or b) continue working on hw (where few would attend). It seemed like lab attendance, although required, wasn't as strict as it should've been.

n/a

Spend less time on pipelining and more on optimizations and memory

More coherent vizualizations of the topics. Like virtual addressing

code optimization

Make 2150 a requirement so you don't have to go over the topics from it.

Maybe do optimization for a little bit longer.

I don't think the labs are incredibly useful, I learned more from doing homework assignments.

Include more emphasis on relating what we learn about architecture to the way we code. (This was done well by Professor Tychonievich)

1. Go deeper into OS/Virtual Memory and Code Optimizations 2. Cover processor and HCL HWs a week faster, this material seemed to drag on.

Maybe give a little more preparation/guidance in class for labs.

Make it a little more coding-heavy.

I'm not sure what I would change.

more on optimizations

less pipelining in favor of more end-of-course matirital

Spend more time on code performance and optimization, less time on pipelining and y86, and perhaps not include virtual memory in this course

12. The course addressed technically rigorous subject matter consistent with the course objectives.

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Question Type: Likert

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contributed by Dean of the School of Engineering and Applied Science

Results for CS-3330-001

Total	Mean	Std Dev	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)	Not Applicable (NA)
31	4.61	0.50	19 (61.29%)	12 (38.71%)	0 (0.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)

Results for SEAS, 3000-level courses

Total	Mean	Std Dev	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)	Not Applicable (NA)
2012	4.38	0.72	962 (47.81%)	905 (44.98%)	88 (4.37%)	33 (1.64%)	15 (0.75%)	9 (0.45%)

~ QUESTIONS AND DETAILS ~	~ ANSWER MATRICES ~

13. The instructor used methods other than/in addition to traditional lectures (for example, active learning, in-class problems, collaborative learning, in-class discussion) effectively in this course.

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Question Type: Likert

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contributed by Dean of the School of Engineering and Applied Science

Results for CS-3330-001, Tychonievich, Luther

Total	Mean	Std Dev	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)	Not Applicable (NA)
31	4.39	0.62	14 (45.16%)	15 (48.39%)	2 (6.45%)	0 (0.00%)	0 (0.00%)	0 (0.00%)

Results for SEAS, 3000-level courses

Total	Mean	Std Dev	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)	Not Applicable (NA)
2395	3.98	1.04	819 (34.20%)	934 (39.00%)	288 (12.03%)	167 (6.97%)	78 (3.26%)	109 (4.55%)

14. There was a reasonable level of effort expected for the credit hours received.

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Question Type: Likert

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contributed by Dean of the School of Engineering and Applied Science

Results for CS-3330-001

Total	Mean	Std Dev	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)	Not Applicable (NA)
31	4.39	0.67	14 (45.16%)	16 (51.61%)	0 (0.00%)	1 (3.23%)	0 (0.00%)	0 (0.00%)

Results for SEAS, 3000-level courses

Total	Mean	Std Dev	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)	Not Applicable (NA)
2007	4.11	0.96	765 (38.12%)	914 (45.54%)	151 (7.52%)	120 (5.98%)	52 (2.59%)	5 (0.25%)

15. The homework assignments helped me learn the subject matter.

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Question Type: Likert

~

contributed by Dean of the School of Engineering and Applied Science

Results for CS-3330-001

Total	Mean	Std Dev	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)	Not Applicable (NA)
31	4.48	0.57	16 (51.61%)	14 (45.16%)	1 (3.23%)	0 (0.00%)	0 (0.00%)	0 (0.00%)

Results for SEAS, 3000-level courses

Total	Mean	Std Dev	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)	Not Applicable (NA)
2006	4.17	0.93	801 (39.93%)	800 (39.88%)	184 (9.17%)	78 (3.89%)	44 (2.19%)	99 (4.94%)

16. The textbook increased my understanding of the material.

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Question Type: Likert

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contributed by Dean of the School of Engineering and Applied Science

Results for CS-3330-001

Total	Mean	Std Dev	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)	Not Applicable (NA)
31	4.45	0.68	17 (54.84%)	11 (35.48%)	3 (9.68%)	0 (0.00%)	0 (0.00%)	0 (0.00%)

Results for SEAS, 3000-level courses

Total	Mean	Std Dev	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)	Not Applicable (NA)
2011	3.59	1.16	358 (17.80%)	509 (25.31%)	354 (17.60%)	165 (8.20%)	96 (4.77%)	529 (26.31%)

17. The course material was well organized and developed.

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Question Type: Likert

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contributed by Dean of the School of Engineering and Applied Science

Results for CS-3330-001, Tychonievich, Luther

Total	Mean	Std Dev	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)	Not Applicable (NA)
31	4.55	0.62	19 (61.29%)	10 (32.26%)	2 (6.45%)	0 (0.00%)	0 (0.00%)	0 (0.00%)

Results for SEAS, 3000-level courses

Total	Mean	Std Dev	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)	Not Applicable (NA)
2384	4.09	0.96	891 (37.37%)	979 (41.07%)	245 (10.28%)	141 (5.91%)	49 (2.06%)	79 (3.31%)

~ QUESTIONS AND DETAILS ~	~ ANSWER MATRICES ~

18. The instructor was knowledgeable about the subject matter.

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Question Type: Likert

~

contributed by Dean of the School of Engineering and Applied Science

Results for CS-3330-001, Tychonievich, Luther

Total	Mean	Std Dev	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)	Not Applicable (NA)
31	4.81	0.40	25 (80.65%)	6 (19.35%)	0 (0.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)

Results for SEAS, 3000-level courses

Total	Mean	Std Dev	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)	Not Applicable (NA)
2376	4.59	0.62	1465 (61.66%)	740 (31.14%)	65 (2.74%)	11 (0.46%)	11 (0.46%)	84 (3.54%)

19. The instructor was well prepared for class.

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Question Type: Likert

~

contributed by Dean of the School of Engineering and Applied Science

Results for CS-3330-001, Tychonievich, Luther

Total	Mean	Std Dev	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)	Not Applicable (NA)
30	4.80	0.41	24 (80.00%)	6 (20.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)

Results for SEAS, 3000-level courses

Total	Mean	Std Dev	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)	Not Applicable (NA)
2381	4.36	0.77	1139 (47.84%)	924 (38.81%)	159 (6.68%)	47 (1.97%)	19 (0.80%)	93 (3.91%)

20. I received adequate preparation from the prior courses in the curriculum to be successful in this course.

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Question Type: Likert

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contributed by Dean of the School of Engineering and Applied Science

Results for CS-3330-001

Total	Mean	Std Dev	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)	Not Applicable (NA)
31	4.10	0.98	14 (45.16%)	8 (25.81%)	7 (22.58%)	2 (6.45%)	0 (0.00%)	0 (0.00%)

Results for SEAS, 3000-level courses

Total	Mean	Std Dev	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)	Not Applicable (NA)
2006	4.03	0.90	634 (31.61%)	909 (45.31%)	273 (13.61%)	99 (4.94%)	32 (1.60%)	59 (2.94%)

21. The grading policy was fair.

~

Question Type: Likert

~

contributed by Dean of the School of Engineering and Applied Science

Results for CS-3330-001, Tychonievich, Luther

Total	Mean	Std Dev	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)	Not Applicable (NA)
30	4.23	0.97	14 (46.67%)	12 (40.00%)	2 (6.67%)	1 (3.33%)	1 (3.33%)	0 (0.00%)

Results for SEAS, 3000-level courses

Total	Mean	Std Dev	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)	Not Applicable (NA)
2382	4.08	0.92	817 (34.30%)	1006 (42.23%)	302 (12.68%)	98 (4.11%)	48 (2.02%)	111 (4.66%)

22. The instructor responded adequately to in-class questions.

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Question Type: Likert

~

contributed by Dean of the School of Engineering and Applied Science

Results for CS-3330-001, Tychonievich, Luther

Total	Mean	Std Dev	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)	Not Applicable (NA)
31	4.55	0.57	18 (58.06%)	12 (38.71%)	1 (3.23%)	0 (0.00%)	0 (0.00%)	0 (0.00%)

Results for SEAS, 3000-level courses

Total	Mean	Std Dev	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)	Not Applicable (NA)
2383	4.32	0.78	1058 (44.40%)	991 (41.59%)	176 (7.39%)	42 (1.76%)	23 (0.97%)	93 (3.90%)

~ QUESTIONS AND DETAILS ~	~ ANSWER MATRICES ~

23. The instructor effectively used technology in support of the learning goals for this course.

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Question Type: Likert

~

contributed by Dean of the School of Engineering and Applied Science

Results for CS-3330-001, Tychonievich, Luther

Total	Mean	Std Dev	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)	Not Applicable (NA)
31	4.48	0.57	16 (51.61%)	14 (45.16%)	1 (3.23%)	0 (0.00%)	0 (0.00%)	0 (0.00%)

Results for SEAS, 3000-level courses

Total	Mean	Std Dev	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)	Not Applicable (NA)
2382	4.09	0.96	868 (36.44%)	974 (40.89%)	259 (10.87%)	98 (4.11%)	67 (2.81%)	116 (4.87%)

24. The average number of hours per week I spent outside of class preparing for this course was:

~

Question Type: Multiple Choice

~

contributed by Office of the Provost

Results for CS-3330-001

Total	Less than 1 (NA)	1 - 3 (NA)	4 - 6 (NA)	7 - 9 (NA)	10 or more (NA)
31	0 (0.00%)	8 (25.81%)	16 (51.61%)	6 (19.35%)	1 (3.23%)

Results for SEAS, 3000-level courses

Total	Less than 1 (NA)	1 - 3 (NA)	4 - 6 (NA)	7 - 9 (NA)	10 or more (NA)
2013	76 (3.78%)	565 (28.07%)	827 (41.08%)	345 (17.14%)	200 (9.94%)

25. I learned a great deal in this course.

~

Question Type: Likert

~

contributed by Office of the Provost

Results for CS-3330-001

Total	Mean	Std Dev	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)
31	4.45	0.81	18 (58.06%)	11 (35.48%)	0 (0.00%)	2 (6.45%)	0 (0.00%)

Results for SEAS, 3000-level courses

Total	Mean	Std Dev	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)
2002	4.09	0.98	764 (38.16%)	869 (43.41%)	207 (10.34%)	102 (5.09%)	60 (3.00%)

26. Overall, this was a worthwhile course.

~

Question Type: Likert

~

contributed by Office of the Provost

Results for CS-3330-001

Total	Mean	Std Dev	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)
31	4.29	0.86	15 (48.39%)	12 (38.71%)	2 (6.45%)	2 (6.45%)	0 (0.00%)

Results for SEAS, 3000-level courses

Total	Mean	Std Dev	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)
2008	4.02	1.04	746 (37.15%)	838 (41.73%)	223 (11.11%)	120 (5.98%)	81 (4.03%)

27. The course's goals and requirements were defined and adhered to by the instructor.

~

Question Type: Likert

~

contributed by Office of the Provost

Results for CS-3330-001, Tychonievich, Luther

Total	Mean	Std Dev	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)
31	4.58	0.50	18 (58.06%)	13 (41.94%)	0 (0.00%)	0 (0.00%)	0 (0.00%)

Results for SEAS, 3000-level courses

Total	Mean	Std Dev	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)
2365	4.27	0.78	986 (41.69%)	1126 (47.61%)	179 (7.57%)	42 (1.78%)	32 (1.35%)

~ QUESTIONS AND DETAILS ~	~ ANSWER MATRICES ~

28. The instructor was approachable and made himself/herself available to students outside the classroom.

~

Question Type: Likert

~

contributed by Office of the Provost

Results for CS-3330-001, Tychonievich, Luther

Total	Mean	Std Dev	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)
31	4.55	0.57	18 (58.06%)	12 (38.71%)	1 (3.23%)	0 (0.00%)	0 (0.00%)

Results for SEAS, 3000-level courses

Total	Mean	Std Dev	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)
2380	4.25	0.85	1067 (44.83%)	944 (39.66%)	289 (12.14%)	46 (1.93%)	34 (1.43%)

29. Overall, the instructor was an effective teacher.

~

Question Type: Likert

~

contributed by Office of the Provost

Results for CS-3330-001, Tychonievich, Luther

Total	Mean	Std Dev	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)
31	4.65	0.55	21 (67.74%)	9 (29.03%)	1 (3.23%)	0 (0.00%)	0 (0.00%)

Results for SEAS, 3000-level courses

Total	Mean	Std Dev	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)
2387	4.14	0.96	1013 (42.44%)	926 (38.79%)	292 (12.23%)	91 (3.81%)	65 (2.72%)

30. Please make any overall comments or observations about this course:

~

Question Type: Short Answer

~

contributed by Office of the Provost

Results for CS-3330-001

Total	Individual Answers
12	*See below for Individual Results*

No overall comments. Great teacher, extremely challenging course.

Professor Tychonievich is a dedicated, excellent lecturer. He has a vested interest in making the course material better, helping his students learn, and making quiz and test questions fair but challenging. He devotes class time to answering questions, which is extremely helpful! He teaches using variety of methods (visual, written, and auditory), which is helpful since each student learns differently. He has ways of gauging class understanding by taking polls during class and by grading tests himself.

I loved this class! I just wish that the grading was a little bit more fair. I worked very hard in this class but the final exam was too difficult. I started studying for the final about two weeks in advance by going to office hours. Still, after taking the exam I felt like studying barely helped me.

Overall an interesting and worthwhile course. I am glad to have taken this course so early in my academic career as I believe it will definitely help me later on.

the professor shares audio and notes from class but it is difficult to follow along the audio with the pictures. video of the slides with the audio like Bloomfield does would be great

Luther is an incredible instructor. I appreciate his fairness, thoroughness, and quirks in class and really enjoy his lecturing style.

Please have office hours not just the two days before the hw is due... it would have been great to also have some over the weekend or later in the week. The final was insane. I really appreciated how much the professor made it a priority to really help students who attended office hours understand the course material. Having a homework due, test, and lab all on the same day was a little stressful. I like the ask-your-professor-any-question part of the last day of class. Luther is an interesting dude. Professor is great dealing with students' family emergencies. Pictures were helpful (eg CPU chip with the IO bridge and memory, etc etc)

Luther is really helpful and he will explain things several different ways if it isn't "clicking" which I appreciated and found helpful.

While in the midst of the semester, Comp Arch was my least favorite course because it actually required consistent effort and I generally couldn't wait until the last minute and BS assignments. However, now having the perspective of finishing the course, it really was not that bad. The assignments were of a feasible scope, grading was very fair, and Prof. Tychonievich was very knowledgeable and approachable. One note: Instead of drawing on blank slides: I wished he used slides in his lectures, annotated them like he usually did during lectures (possibly inserting blank slides if he needs more room), and then posted the annotated slides on the website.

the reading quizzes were just painful

~ QUESTIONS AND DETAILS ~	~ ANSWER MATRICES ~
	Overall Luther was great. My only complaint is that his multiple choice questions seem like they are tricky only for the purpose of being tricky, not difficult in order to assess knowledge. I felt like I was taking the SAT during his exams Grading was fair for the most part, but quizzes seemed to be overly difficult. Averages were consistently very low and hurt many students grades relatively significantly.