

STA 418 01, Joint with STA 518 01  
Computing and Graphics with R  
Course type: Face-to-Face

Evaluation Delivery: Online  
Evaluation Form: A3  
Responses: 17/24 (71% very high)

Taught by: Bradford Dykes

**Instructor Evaluated: Bradford Dykes-Assist Prof**

**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:

Combined Median	Adjusted Combined Median
<b>3.3</b>	<b>3.8</b>
(0=lowest; 5=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: 5.4</b>
(1=lowest; 7=highest)

## SUMMATIVE ITEMS

	N	Excellent (5)	Very Good (4)	Good (3)	Fair (2)	Poor (1)	Very Poor (0)	Median	Adjusted Median
The course as a whole was:	17	18%	24%	35%	18%	6%		3.2	3.8
The course content was:	17	24%	24%	47%	6%			3.4	3.8
The instructor's contribution to the course was:	17	18%	29%	29%	12%	6%	6%	3.4	3.9
The instructor's effectiveness in teaching the subject matter was:	17	18%	18%	18%	29%	6%	12%	2.7	3.3

## STUDENT ENGAGEMENT

Relative to other college courses you have taken:	N	Much Higher (7)	(6)	(5)	Average (4)	(3)	(2)	Much Lower (1)	Median	
Do you expect your grade in this course to be:	17	6%	6%	6%	47%	24%	6%	6%	3.8	
The intellectual challenge presented was:	17	35%	18%	29%	18%				5.7	
The amount of effort you put into this course was:	17	41%	29%	29%					6.2	
The amount of effort to succeed in this course was:	17	41%	24%	35%					6.1	
Your involvement in course (doing assignments, attending classes, etc.) was:	17	29%	29%	24%	12%	6%			5.8	

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: 3.2 (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
		29%	12%	6%	24%	12%	6%	6%			6%

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

**Class median: 6.0 Hours per credit: 2 (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%	18%	12%	12%	18%	6%					6%

What grade do you expect in this course?

**Class median: 3.6 (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 6%	Credit	No Credit
35%	24%	18%	6%			6%		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
41%		29%	29%		

STANDARD FORMATIVE ITEMS

	N	Excellent (5)	Very Good (4)	Good (3)	Fair (2)	Poor (1)	Very Poor (0)	Median	Relative Rank
Course organization was:	17	18%	41%	18%	12%	6%	6%	3.7	4
Explanations by instructor were:	17	12%	12%	24%	24%	18%	12%	2.4	16
Instructor's ability to present alternative explanations when needed was:	17	18%	29%	24%	12%	6%	12%	3.4	6
Instructor's use of examples and illustrations was:	17	18%	35%	24%	12%	6%	6%	3.6	8
Quality of questions or problems raised by the instructor was:	17	12%	24%	35%	12%	12%	6%	3.1	14
Student confidence in instructor's knowledge was:	17	41%	29%	18%	12%			4.2	5
Instructor's enthusiasm was:	17	29%	29%	41%				3.8	7
Encouragement given students to express themselves was:	17	41%	35%	12%	6%		6%	4.2	2
Answers to student questions were:	17	29%	12%	24%	12%	6%	18%	3.1	13
Availability of extra help when needed was:	17	24%	29%	24%	12%	6%	6%	3.6	9
Use of class time was:	17	18%	24%	35%	12%	12%		3.2	11
Instructor's interest in whether students learned was:	17	35%	12%	24%	24%	6%		3.4	12
Amount you learned in the course was:	17	35%	24%	24%	18%			3.9	3
Relevance and usefulness of course content were:	17	41%	29%	29%				4.2	1
Evaluative and grading techniques (tests, papers, projects, etc.) were:	17	24%	18%	18%	24%		18%	3.0	15
Reasonableness of assigned work was:	17	12%	29%	12%	29%	12%	6%	2.8	17
Clarity of student responsibilities and requirements was:	17	18%	29%	18%	12%	18%	6%	3.3	10

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## STANDARD OPEN-ENDED QUESTIONS

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

1. The was very stimulating. I learned how to explore real data and the instructor structured the class to mimic the real world at times, so I feel like I gained a very valuable experience.
2. Yeah, it defiantly made me think and was very much problem-solving oriented.
3. Yes, learning R is a very useful skill and I'm glad I took this class!
4. Yes because this one of the few classes that teach and utilize R at GV.
5. Yes, it was a very challenging course.
6. yes, absolutely
7. The course was very intellectually stimulating
8. It was definitely stimulating and stretched my thinking because I'd never tried this language before
9. Yes; the questions posed in the earlier application tasks and the midterm projects were very difficult but useful. They required skills not learned in class, so you had to google a lot of stuff to get them done for the most part.
10. It was intellectually stimulating but professor contributed very little other than making assignments for us to do
11. Some aspects of it were. Learning the different ways to do things in R stretched my thinking in that you have to think of the best way to do things so that the code looks neat and works efficiently.
12. The course has been intellectually stimulating. My previous experience in data analysis has been with software that did not utilize programming. With programming, you have much more freedom with your analyses and visualizations. Despite not performing well in the course, I really value the experience I have gained from it, and the exposure to things such as R Studio Cloud, GitHub, R Markdown, and Shiny. At a high level, I have learned how to enter and import data, manipulate and wrangle data, create numerical summaries and stunning customizable graphical summaries, create models, write functions, and create Shiny Apps, posters, business cards, and resumes all within R.
15. Coding has always been a difficulty for me. Although I've been exposed to some of the syntax that is used, it was different for R. I would have goal in mind of what to do and not know how to accomplish it. The book was not always helpful for more challenging tasks. Therefore, I had to seek help group members and the R community which were helpful most of the time, but not always. It encouraged me to approach the tasks in different ways. This course definitely stretched my thinking for this reason.

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

1. I definitely think the midterms, even though they took a lot of time and work, really helped solidify my learning.
2. The application tasks and in-class activities.
3. The team activities were for the most part quite informative and good examples to come back to during application tasks.
4. The application tasks.
5. Having to use R in every class was helpful.
6. the team activities were where I felt I learned the most R
7. code contents of data wrangling, visualization, shiny apps and animations
8. Probably the pre-class meeting prep assignments and the in class activities
9. The in-class activities were the most helpful toward learning R, since we could talk with our groupmates and the activities were mostly guided and usually provided clearer instructions than some of the other assignments.
10. Application tasks contributed to learning but were frequently difficult because there was no class lecture or instruction. Just group work
11. The thing that contributed most was the primers and the in class activities.
12. What has contributed most to my learning is Dr. Dykes himself. He is incredibly knowledgeable with the R language and how it works. When you ask him for individual help, he is very clear, concise and articulate, explaining what the code is, how it works, and why it works. I wish he would have given lectures demonstrating code for the course topics in this manner that he explains individual topics. I feel that would have better contributed to my overall learning rather than trying to teach myself the topics via online primers and the textbook. I also should note that I like the Mastery Based approach for this course because it allows for resubmission on assignments were one might have performed poorly the initial time. I think this is a metric with good validity for operationalizing learning, as one typically learns continuously over time.
13. Actually coding is definitely the best way to learn a new coding language
14. I think the Tidy Data section of the class will prove to be extremely valuable in the future. I've already used it quite a bit, and it was probably one of the only times in a stat class that we've put that much thought into how our data needs to look in order to properly analyze it. The use of git/github I think will also prove to be very valuable.

15. Working in groups throughout the entire course was helpful in addition to the professor always being available for assistance. There was always someone there to collaborate with for any questions that arose. On the midterms, it was extremely helpful to divide up the Second Midterm by "Tasks". It would have been more helpful have more direction on the first midterm.

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

1. Having a group that always isn't on top of it and willing to put in the work can be frustrating, especially since a lot of the class is structured around group work.
2. The complicated grading structure.
3. Some of the meeting preps were very long so I would just skip through them and not actually learn anything.
4. The in-class activities. If you are in a group with people who are great coders, they work ahead and finish the assignment before the novice ones have a chance to grasp how to do the assignment.
5. The workload was pretty heavy and stressful at times.
6. Unclear instructions
7. The enormous time needed to invest in the course. Though very profitable
8. Being in a group with others
9. Although the in-class activities were helpful in learning R, I wish we also would have some lecture from Professor Dykes because we are kind of thrown into each assignment not knowing what to do. The meeting preparations were sometimes helpful, but sometimes not helpful, and they were not adequate for learning the material. I think lecture could do some clearing up on how certain things work, rather than us just trying stuff and seeing what works but not understanding why. I also take issue with the availability of help when needed outside of class; I would often stop by office hours and he was not there, and posting an issue in Github is slow and is inefficient when talking about code that is part of a large assignment and can't be understood through a quick question post. I wish we got more one-on-one time with the professor, rather than figuring everything out ourselves (which can be good, but sometimes I need reassurance or explanations).
10. The professor did not teach at all in the class. He was willing to answer questions but sometimes it's hard to ask questions when you literally have nowhere to start with what you don't understand
11. The thing that detracted most from my learning was the teams. I don't mind working in groups for projects or activities, but my team just didn't have the best chemistry to get things going.
12. Aspects that detracted from my learning are the "teach yourself" of learning via meeting primers before class, followed by strictly group work in class.
13. Team work - some would be good, but almost all of our grades were determined based on teamwork. Because you were assigned teams, it was just the luck of the draw as to how useful your classmates were.
15. Although working in groups was beneficial, it was difficult when the group would move faster than my pace of learning and fully understanding the material. Also, having application tasks due while also being assigned midterms negatively affected my ability to complete each assignment with comprehension.

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

1. Less busy work! Focus more on bigger assignments rather a bunch of little things to do. It was really hard to keep track of all of it.
2. I would go back to a normal percentage based grading system or modify what you have now. I know that it was designed to reduce stress but it just seemed like it made it more stressful. Maybe some sort of combination of the two?
3. Begin each class with like a 10/15 minute lecture/demonstration to show what we are learning that day. Sometimes we would just jump into a new subject and I would be confused
4. Less group assignments in class.
5. The activities completed in class are way easier than the application tasks and midterms. If the activities were more difficult so we could apply more of the knowledge we learn in class to our midterms that would be helpful. The workload was very heavy in this class. I think it would be helpful to do less but go more in-depth so that the midterms are not so time-consuming. Just making the activities gel more with the application tasks and midterm projects would be nice.
6. Make instructions for assignments more clear. I felt like I am guessing at what you want.
7. The course is well packaged with numerous interactive resources which is excellent! However, it is vital to find out major areas of difficulty and demonstrate practically in class with students.
8. Please don't continue having groups!
9. I would edit the "requirements" for getting each letter grade outlined in the syllabus. I think the levels are too restrictive, and allow for one bad grade dropping you down a couple letter grades, which I don't think accurately reflects the work put into the class. I would also like there to be some idea of what our grade is in the class throughout the class, rather than just at the end. I don't mind the mastery system, but it would be nice to have a letter grade A-F in Blackboard so I have some idea of how I'm doing. I would also either make the midterms easier, or more adequately prepare us for the difficulty of them. We did not have sufficient practice cleaning and merging data for the first midterm, nor did we have enough practice with highly complex functions utilized in the second midterm. Also, it would be helpful for the final team project to have some more clearly defined guidelines or examples of what he expects, rather than "picking a dataset and doing something with it". We didn't know what "enough" was for the team project or what one looked like, so I don't imagine being able to meet whatever expectations he has.
10. There needs to be at least some lecture in order for people to learn. Not everyone in statistics comes from a coding background so picking up a new coding language is not always easy

11. The grading scale. Mastery grading may be my favorite way for professors to grade, but in other classes each grade of E or S or anything else counted as a percent to that section of grades, then you needed a certain percent in each section. So theoretically you could get a bunch of E's for the application task and that would make your percent really high for those, and then one P in application tasks wouldn't affect your grade like it would for the scale that was used in this class. I specifically do not like how I could have really good grades in everything and be lined up for an A, and then if I get an S on the final GROUP project it lowers my grade all the way to a B+, not even just an A-, and there are no revisions on it since it is at the end of the semester. Maybe another group project in the middle of the semester that can be revised to get the E for the A requirement would fix this? It is hard to be near perfect the first try on something that is graded with judgement rather than an exam that has definitive answers.

12. I do have some suggestions for improving the course. This response may jeopardize my anonymity; however, for the sake of posterity, I feel that it is completely worth it. I am a first year student in the Biostatistics Master's program, with no real previous experience with programming. This course is not tailored nicely for someone teaching themselves a programming language for the first time, as one "teaches themselves" the topics before class via primers and the book. In the circumstance you have no prior knowledge of programming, learning something completely foreign in this way can be difficult. Sometimes I would do the meeting preparations but not quite fully grasp the concepts, then I get to class and work in group projects on assignments related to the topics reviewed before class. As a new and weak programmer working in groups with much stronger and more experienced programmers, I found that I by the time I got halfway through a problem, a group member would have already finished the question, and pushed it to GitHub. To avoid constantly only getting halfway through problems and not reinforcing the topics properly, I would go back and try to do the assignments again individually outside of class, but this can still be confusing and time consuming. I assume most students taking the class came from Statistics or Computer Science backgrounds, where they had already had heavy exposure to programming; students of this criteria likely had a better experience and were much more successful in the course. To help students with weaker programming backgrounds, I would suggest Dr. Dykes to show some of the topics in class as a lecture demonstration, before the students start working on the group assignments; I feel that this would add clarity, greater opportunities for learning, and promote collaboration between groups as opposed to only within groups.

13. Because all of class time is spent working on coding individually or as a team, the professor didn't really add anything to the class. I felt like I could have shown up to class once a month and gotten the same amount of information I did attending class every week. This class might be best as an online course - due to the nature of the course, the professor has to spend a lot of time grading but no time whatsoever lecturing.

14. I'm not sure how feasible it would be, but I think getting to shiny apps/websites/blogs a bit sooner in the course would've been great.

15. It would be helpful to not assign Application tasks at the same rate when midterms are assigned/due. Also, possibly creating the Activities in such a way that each group member would have to contribute to each exercise to ensure each person has the opportunity to practice the different skills. Lastly, having "Tasks" on each midterm.