

As a future professor, I view teaching as one of my most important responsibilities: a role where I can inspire and engage students in the field of statistics while also expanding its reach to a broader audience. I have developed my teaching and mentoring skills through my experiences in both secondary and higher education: I taught precalculus as a student teacher at a Korean high school and served as an instructor for an introductory statistics course at Texas A&M University.<sup>1</sup> These teaching experiences, along with several class involvements as a graduate teaching assistant, greatly helped shape my teaching philosophy.

My teaching philosophy centers on (1) motivation (*why* students engage), (2) active learning (*how* students engage), and (3) inclusivity (ensuring *everyone* can engage).

**Motivation.** Through my teaching experiences, I have come to deeply recognize that motivation is the most important factor in students achieving success. Without feeling motivated by the course topics/materials and convinced that it's worth their time, students may miss the opportunity to explore their full potential and develop a deeper understanding of the course subject. On the first day of the class, I handed out a survey including questions asking what brings them to register for the class, what skills and knowledge they want to learn from the class, and if they have any special requests such as disability accommodation. This survey greatly helped me to understand the motivational drivers of the students and their needs and expectations, which led me to prepare lectures with more motivating data examples tailored to students' backgrounds and interests.

**Active learning.** Unlike asynchronous and pre-recorded lectures, a live classroom can provide an interaction between the instructor and students and students themselves. Fostering an environment where students can actively participate, learn from their peers, and develop skills and knowledge beyond textbooks greatly helps students find motivation and has a significant impact on the classroom atmosphere being active and energetic. When explaining new concepts, I try to utilize interactive demos as much as possible using tools like GeoGebra or R Shiny apps. By allowing students to handle data, draw plots, and run simulations by themselves, I found students were more actively participating and had a much better understanding. Also, as a teaching assistant in several statistics courses, I observed that student-led data analysis projects were the most effective way to motivate and engage students in real-world applications of data analysis skills.

**Embracing different learning curves.** A class instructor should try best to meet the diverse needs of all students with different learning curves. This becomes most tricky when it comes to assessment since too easy or too hard questions can both discourage students. To accommodate diverse students' backgrounds, inside the classroom I try to re-explain a single concept from multiple views as much as possible. For example, a concept of p-value can be illustrated with mathematical derivation, graphical depiction, multiple simulations, and concrete case study examples. Outside of the classroom, I regularly hold extended office hours for students, and one-to-one interaction with students allows me to better understand their needs and individual learning styles. In terms of assessment, I try to include bonus questions in quizzes and exams, comprising both easy and relatively hard questions. Compared to curving grades, I found that bonus questions are much more effective at motivating students in their different learning stages and fostering a growth mindset where grades are earned, not given.

**Future plans.** I believe that one of the most crucial roles of higher education is to equip students with critical thinking skills and the capacity for lifelong learning. This role is especially important for the statistics department, where data becomes more and more abundant, and insights from data are extensively utilized in the decision-making processes across nearly every field. Based on my teaching philosophy, my main teaching goal is to help students build the skills necessary to explore and tackle statistical problems they may encounter outside of the classroom. As a future faculty member, I am excited and prepared to teach courses in introductory probability and statistics, statistical inference, statistical computation, and probabilistic machine learning, as well as more practical courses in data science, such as exploratory data analysis or programming. I also look forward to the opportunities to design and teach new courses on both theoretical and practical aspects that can provide students with hands-on experience on modern statistical and machine learning tools that can last after graduation.

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<sup>1</sup>Course evaluation report: [https://changwoo-lee.github.io/files/STAT303\\_Lee\\_Summer2021.pdf](https://changwoo-lee.github.io/files/STAT303_Lee_Summer2021.pdf).



### TAMU-College Station Student Course Evaluation (End-of-Term) Completed

☐ Summer 2021 - College Station / Student Course Evaluation (End of Term) / Anonymous Survey

Schedule: 5/12/2021 to  
8/22/2021

Course Assignments: **1779** / Survey Participants: **41733**

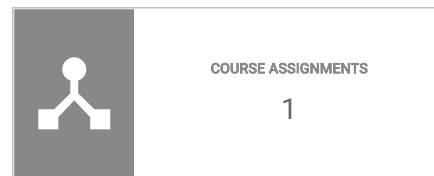
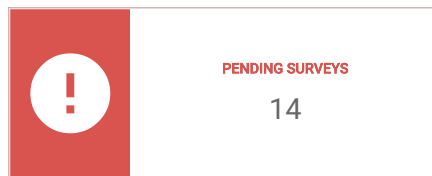
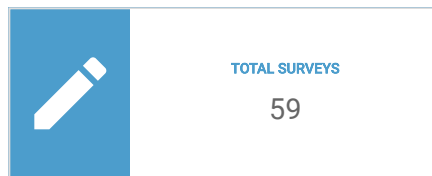
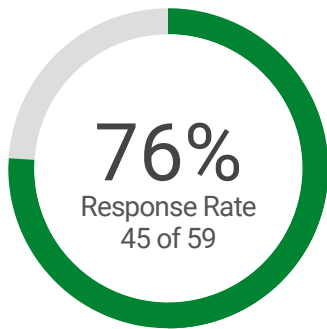
Results Available: 8/24/2021



This survey completed on **Sunday, August 22, 2021** at **11:59PM**.

**College:** Science  
**Department:** CS-Statistics  
**Course Section:** STAT 303 - 201 STATISTICAL METHODS  
**Course Section Director:** NA  
**Instructor:** Changwoo Lee

#### Survey Overview / Course Section Results Aggregate



#### Survey Data / Course Section Results Aggregate

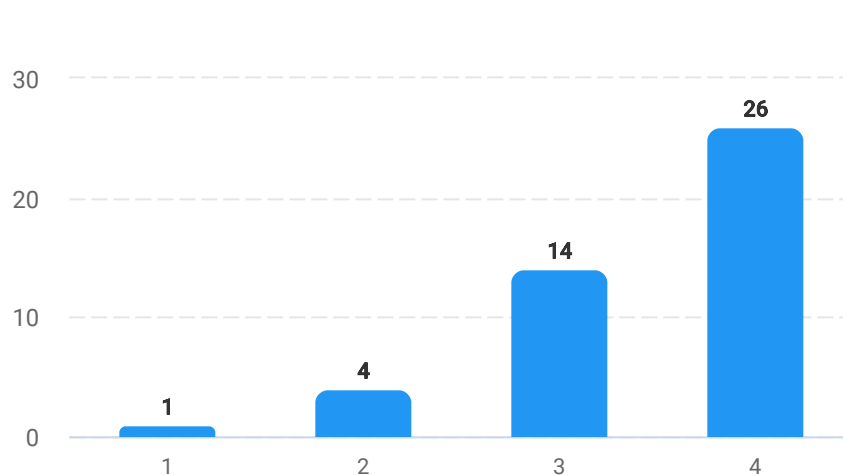
##### TAMU Student Course Evaluation

- 1 Begin this course evaluation by reflecting on your own level of engagement and participation in the course. What portion of the class preparation activities (e.g., readings, online modules, videos) and assignments did you complete?

(Multi-Choice, Single Answer)



| Value | Option | Total |
|-------|--------|-------|
| 1     | <50%   | 1     |
| 2     | 50-70% | 4     |
| 3     | 71-90% | 14    |
| 4     | >90%   | 26    |



| Average   |
|-----------|
| 3.44      |
| Median    |
| 4.00      |
| Mode      |
| 4         |
| Std. Dev. |
| 0.75      |
| Variance  |
| 0.56      |

#### Student Comments:

- I completed about 40% percent of the readings from the book and about 60% of the zoom lectures.
- For some reason I was always kicked out of the zoom sessions I attended. This is NOT a class that should be taught online and it's also a summer course so do not be discouraged by low engagement. Us students have had enough of zoom university. truly.
- Did all of them.
- I read the textbook rather than attend class or watch the lectures. I know that's not entirely great, but it just makes more sense to me to read the text because in class I kinda get confused and overwhelmed. The homeworks are great and I love that you get unlimited tries because it lets me test if I understand the material.
- All assignments
- I completed everything.

zoom <sup>read lectures</sup> <sup>great completed</sup> class



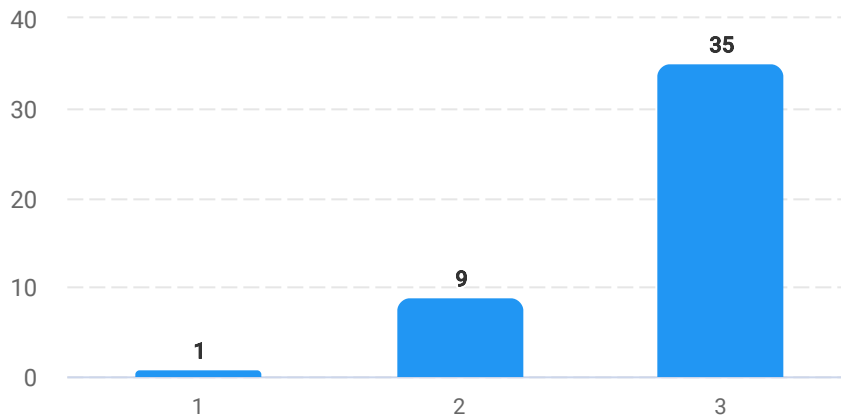
2

Based on what the instructor(s) communicated, and the information provided in the course syllabus, I understood what was expected of me.

(Multi-Choice, Single Answer)

Institution Question

| Value | Option  | Total |
|-------|---|-------|
| 1     | No, I did not understand what was expected of me. | 1     |
| 2     | I partially understood what was expected of me.   | 9     |
| 3     | Yes, I understood what was expected of me.        | 35    |



Average

2.76

Median

3.00

Mode

3

Std. Dev.

0.48

Variance

0.23

#### Student Comments:

- very thankful for the extra credit opportunities
- Very much so, everything was very clear.
- Partially
- The syllabus had typos and overall the class was very hard to understand. Especially how grading was going to work.

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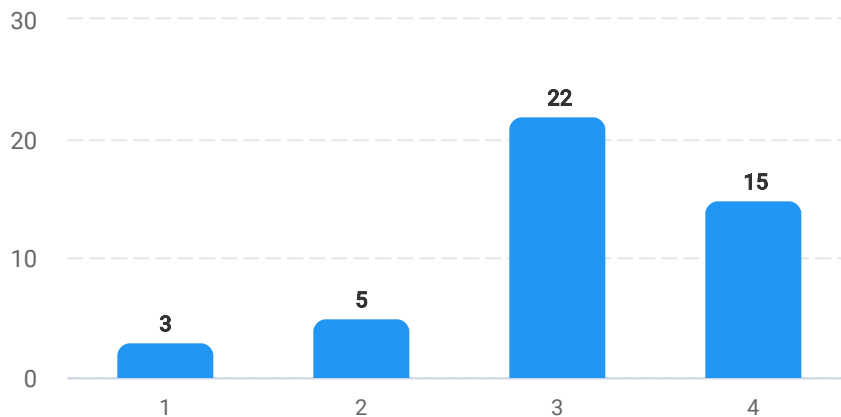
3

This course helped me learn concepts or skills as stated in course objectives/outcomes.

(Multi-Choice, Single Answer)

Institution Question

| Value | Option  | Total |
|-------|---|-------|
| 1     | This course did not help me learn the concepts or skills.         | 3     |
| 2     | This course only slightly helped me learn the concepts or skills. | 5     |
| 3     | This course moderately helped me learn the concepts or skills.    | 22    |
| 4     | This course definitely helped me learn the concepts or skills.    | 15    |



Average

3.09

Median

3.00

Mode

3

Std. Dev.

0.84

Variance

0.70

#### Student Comments:

- This is a hard course
- I had a very hard time keeping up in this class, the handwriting was almost un readable, and concepts covered in class were many times harder on exams. It felt like we didn't cover everything that was on exams.

hard exams  
class





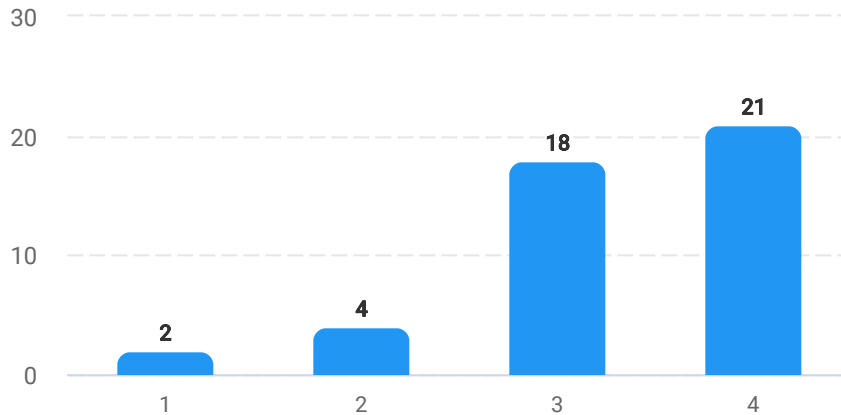
4

In this course, I engaged in critical thinking and/or problem solving.

(Multi-Choice, Single Answer)

Institution Question

| Value | Option     | Total |
|-------|------------|-------|
| 1     | Never      | 2     |
| 2     | Seldom     | 4     |
| 3     | Often      | 18    |
| 4     | Frequently | 21    |



Average

3.29

Median

3.00

Mode

4

Std. Dev.

0.81

Variance

0.65

#### Student Comments:

- never had engagement opportunities
- This class requires a lot of thought
- I do not think the instructor asked us a single question and I felt like when I asked questions, my questions went unnoticed

asked  
questions





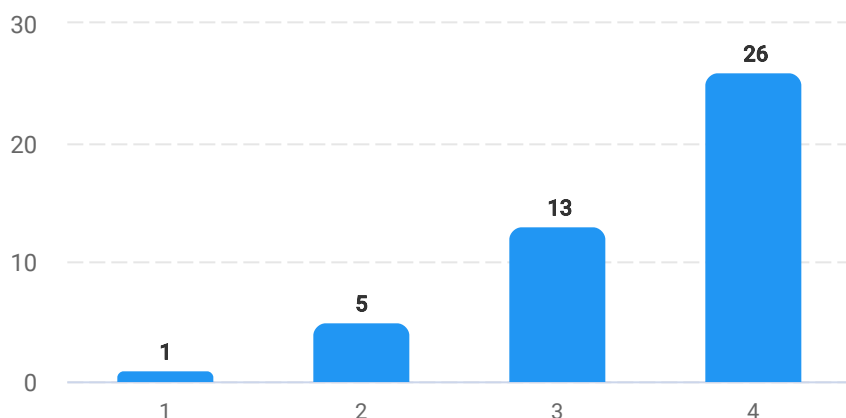
5

Please rate the organization of this course.

(Multi-Choice, Single Answer)

Institution Question

| Value | Option               | Total |
|-------|----------------------|-------|
| 1     | Not at all organized | 1     |
| 2     | Slightly organized   | 5     |
| 3     | Moderately organized | 13    |
| 4     | Very well organized  | 26    |



Average

3.42

Median

4.00

Mode

4

Std. Dev.

0.77

Variance

0.60

Student Comments:

- every zoom was chaos trying to fit in as much information as fast as possible you couldn't follow along
- It's a five week course, so I can't complain about the cramped-ness of the class. I understand professor Lee has a limited time to teach a class.
- He was clear in the assignments, exams, and what was expected.
- Slightly
- The course was hard to work through and the zoom recordings, etc. we're all over the place and did not label what they were or what day they were from.



# zoom course



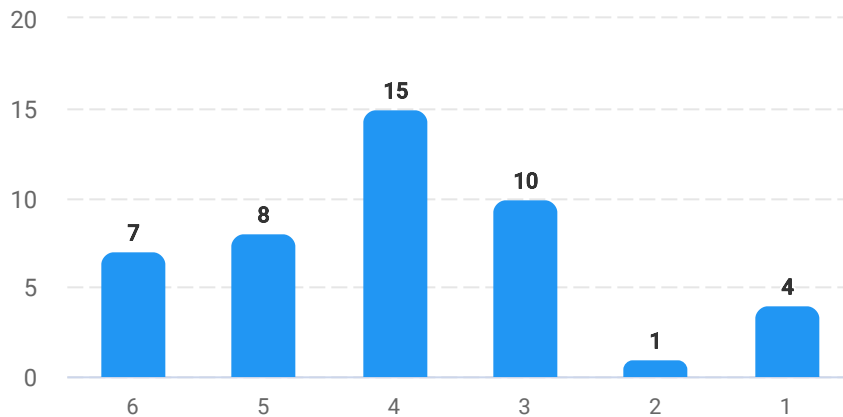
6

In this course, I learned to critically evaluate diverse ideas and perspectives.

(Multi-Choice, Single Answer)

Institution Question

| Value | Option                     | Total |
|-------|----------------------------|-------|
| 6     | Not Applicable             | 7     |
| 5     | Strongly agree             | 8     |
| 4     | Agree                      | 15    |
| 3     | Neither agree nor disagree | 10    |
| 2     | Disagree                   | 1     |
| 1     | Strongly disagree          | 4     |



Average

3.58

Median

4.00

Mode

4

Std. Dev.

1.16

Variance

1.35

## Student Comments:

- it's math you don't really think critically it's kind of true or not true
- N/a





it's



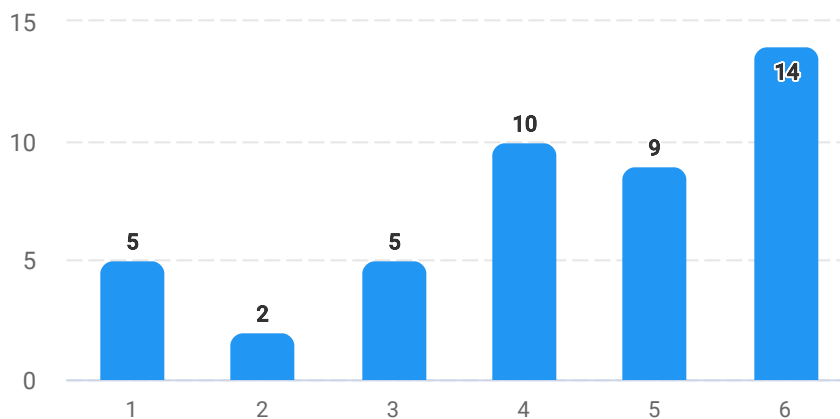
7

Feedback in this course helped me learn. *Please note, feedback can be either **informal** (e.g., in class discussion, chat boards, think-pair-share, office hour discussions, help sessions) or **formal** (e.g., written or clinical assessments, review of exams, peer reviews, clicker questions).*

(Multi-Choice, Single Answer)

Institution Question

| Value | Option                                       | Total |
|-------|--|-------|
| 1     | No feedback was provided.                    | 5     |
| 2     | Feedback provided was not at all helpful.    | 2     |
| 3     | Feedback provided was only slightly helpful. | 5     |
| 4     | Feedback provided was moderately helpful.    | 10    |
| 5     | Feedback provided was very helpful.          | 9     |
| 6     | Feedback provided was extremely helpful.     | 14    |



Average

4.29

Median

5.00

Mode

6

Std. Dev.

1.63

Variance

2.65

Student Comments:



- Again, the way the homework is graded immediately makes it really easy to understand how to do the questions and if you're doing them correctly. Absolutely love it.
- quiz review, recitations, Chang was very helpful when I emailed him
- None
- Very fast and hard to follow the feedback.

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8

The instructor fostered an effective learning environment.

(Instructor Multi-Choice)

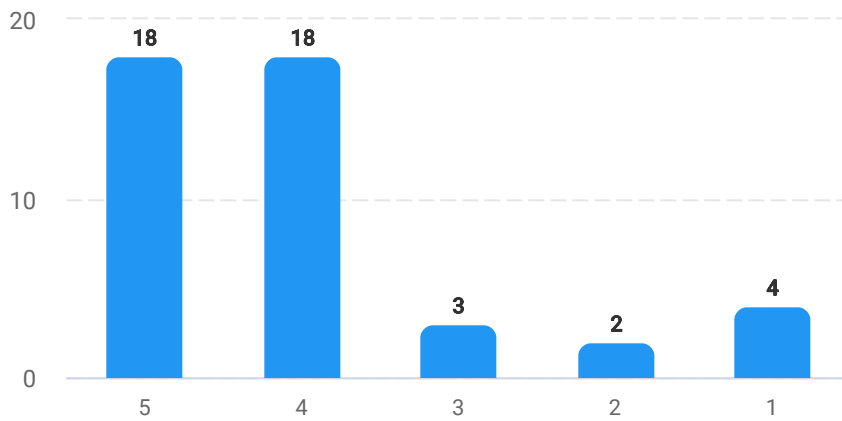
Institution Question



Changwoo Lee Instructor

| Value | Option                     | Total |
|-------|----------------------------|-------|
| 5     | Strongly agree             | 18    |
| 4     | Agree                      | 18    |
| 3     | Neither agree nor disagree | 3     |
| 2     | Disagree                   | 2     |
| 1     | Strongly disagree          | 4     |





| Average   |
|-----------|
| 3.98      |
| Median    |
| 4.00      |
| Mode      |
| 5,4       |
| Std. Dev. |
| 1.20      |
| Variance  |
| 1.44      |

#### Student Comments:

- N/a
- I have never studied this much for a class before in my life and still done so poorly on exams.

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9

The instructor's teaching methods contributed to my learning.

(Instructor Multi-Choice)

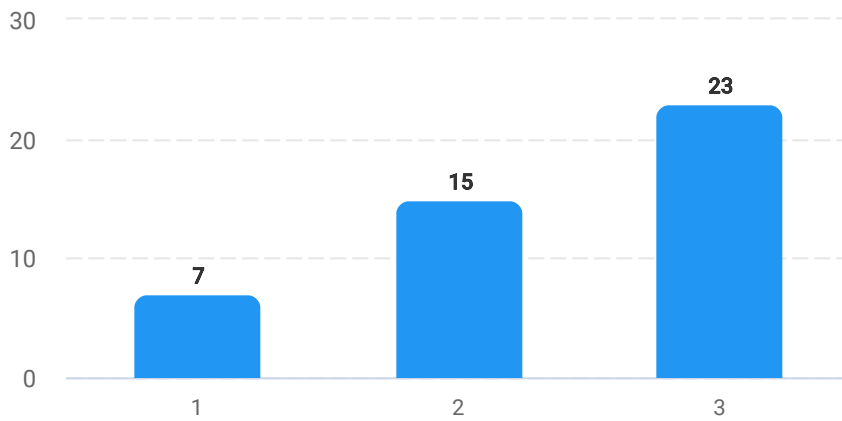
Institution Question



Changwoo Lee Instructor

| Value | Option               | Total |
|-------|----------------------|-------|
| 1     | Did not contribute   | 7     |
| 2     | Contributed a little | 15    |
| 3     | Contributed a lot    | 23    |





| Average   |
|-----------|
| 2.36      |
| Median    |
| 3.00      |
| Mode      |
| 3         |
| Std. Dev. |
| 0.74      |
| Variance  |
| 0.54      |

#### Student Comments:

- I taught myself

#### **Word Cloud Not Available**

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10

The instructor encouraged students to take responsibility for their own learning.

(Instructor Multi-Choice)

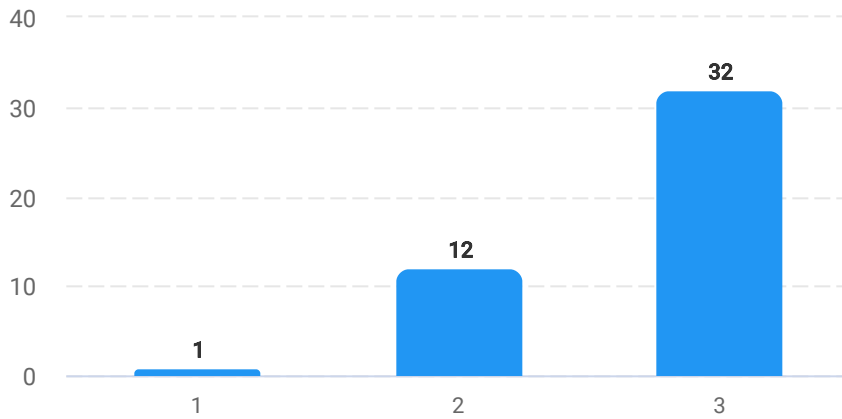
Institution Question



Changwoo Lee Instructor

| Value | Option                | Total |
|-------|-----------------------|-------|
| 1     | Did not encourage     | 1     |
| 2     | Sometimes encouraged  | 12    |
| 3     | Frequently encouraged | 32    |





| Average   |
|-----------|
| 2.69      |
| Median    |
| 3.00      |
| Mode      |
| 3         |
| Std. Dev. |
| 0.51      |
| Variance  |
| 0.26      |

#### Student Comments:

- Exam 1 grades were not great, told us how few people were watching the lectures from his data, encouraged us to watch
- Sometimes

#### Word Cloud Not Available

No text to process or the text does not contain words occurring at least 2 times.

11

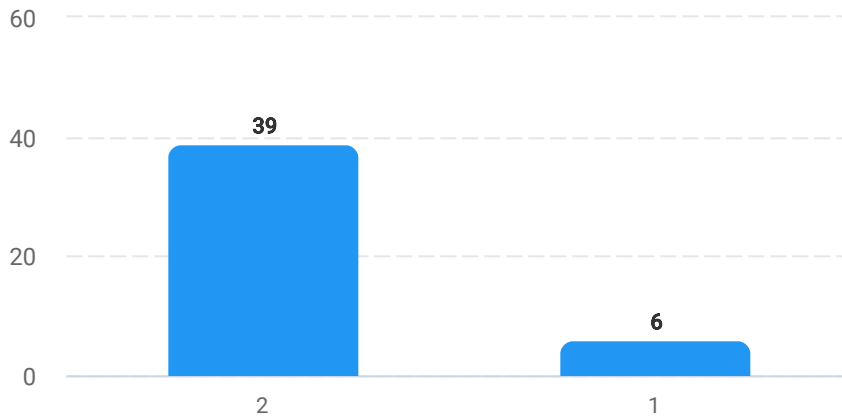
Is this course required?

(Multi-Choice, Single Answer)

Institution Question

| Value | Option | Total |
|-------|--------|-------|
| 2     | Yes    | 39    |
| 1     | No     | 6     |





| Average   |
|-----------|
| 1.87      |
| Median    |
| 2.00      |
| Mode      |
| 2         |
| Std. Dev. |
| 0.34      |
| Variance  |
| 0.12      |

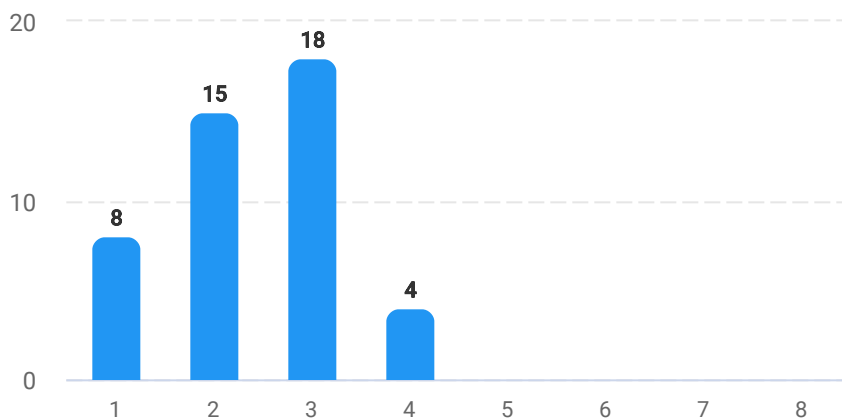
12

## Expected Grade in this Course

(Multi-Choice, Single Answer)

Institution Question

| Value | Option | Total |
|-------|--------|-------|
| 1     | A      | 8     |
| 2     | B      | 15    |
| 3     | C      | 18    |
| 4     | D      | 4     |
| 5     | F      | 0     |
| 6     | I      | 0     |
| 7     | S      | 0     |
| 8     | U      | 0     |



| Average   |
|-----------|
| 2.40      |
| Median    |
| 2.00      |
| Mode      |
| 3         |
| Std. Dev. |
| 0.88      |
| Variance  |
| 0.77      |

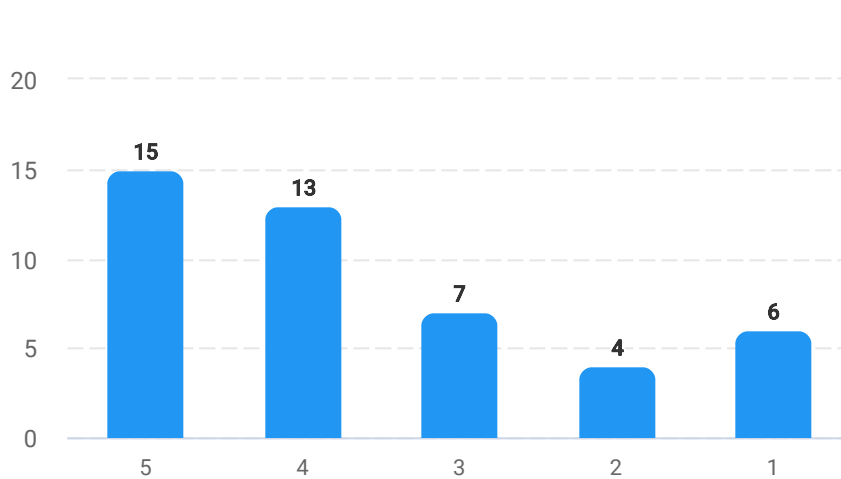


On the whole, this was a good course.

(Multi-Choice, Single Answer)

Department Question

| Value | Option            | Total |
|-------|-------------------|-------|
| 5     | Strongly Agree    | 15    |
| 4     | Agree             | 13    |
| 3     | Undecided         | 7     |
| 2     | Disagree          | 4     |
| 1     | Strongly Disagree | 6     |



Average

3.60

Median

4.00

Mode

5

Std. Dev.

1.37

Variance

1.88

#### Student Comments:

- Very hard

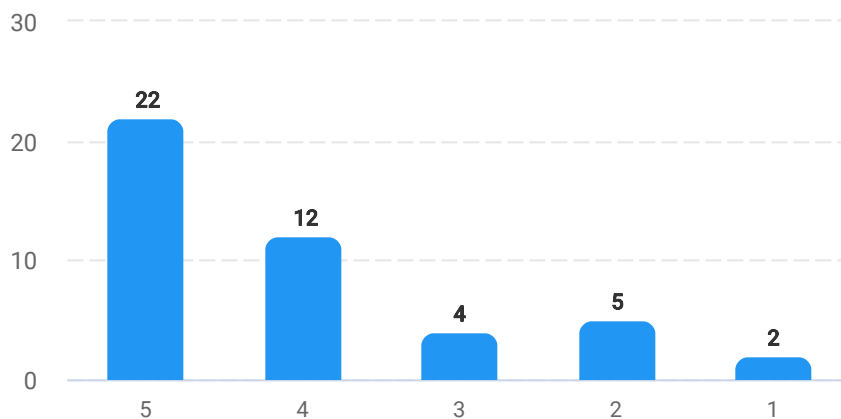
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Changwoo Lee Instructor

| Value | Option            | Total |
|-------|-------------------|-------|
| 5     | Strongly Agree    | 22    |
| 4     | Agree             | 12    |
| 3     | Undecided         | 4     |
| 2     | Disagree          | 5     |
| 1     | Strongly Disagree | 2     |



Average

4.04

Median

4.00

Mode

5

Std. Dev.

1.19

Variance

1.42

Student Comments:

- He is very good at explaining every single concept and problem in depth, but his English is not great. On the whole he uses his slides 100% of the time which makes the course a bit bland. I recommend taking some pages or problems from the book and to incorporate them in at the end of his lecture.
- You can tell he understands this subject, but that he also understands how to teach the course (which is a rare find.) He's got a calm feeling to him that makes watching lecture easy and understandable, and he describes material in a way that comes across clearly and is easy to grasp. The review sessions he had were the most beneficial aspect of the course, and I really appreciate how he went about the class as a whole. Other professors could learn from him.
- He is an amazing instructor.

easy  
understands  
lecture



# course



