IDS 701: Unifying Data Science

Spring 2022 Course Evaluation

This report includes all responses received to this survey in the last 120 days.

Please indicate your level of agreement with the following statements regarding IDS 701.

Scale 1-5, where 1 = strongly disagree and 5 = strongly agree
Note: these items are sorted by mean (from highest to lowest).

Field	Mean	SD	Min	Max	N
This course increased my knowledge in the subject.	4.69	0.46	4.00	5.00	32
Grading was fair, appropriate, and consistent.	4.56	0.56	3.00	5.00	32
The assignments were appropriate.	4.55	0.71	2.00	5.00	31
This course increased my interest in the subject.	4.53	0.66	3.00	5.00	32
The assignments were appropriate for group work.	4.50	0.71	2.00	5.00	32
The course objectives were clear.	4.34	0.73	2.00	5.00	32
The readings were clear and appropriate.	4.06	0.79	2.00	5.00	32

32 Responses

Field	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
This course increased my knowledge in the subject.	0%	0%	0%	31%	69%
The assignments were appropriate.	0%	3%	3%	29%	65%
This course increased my interest in the subject.	0%	0%	9%	28%	63%
Grading was fair, appropriate, and consistent.	0%	0%	3%	38%	59%
The assignments were appropriate for group work.	0%	3%	3%	34%	59%
The course objectives were clear.	0%	3%	6%	44%	47%

The readings were clear and appropriate.	0%	3%	19%	47%	31%

Please provide any explanations for the responses about IDS 701, especially if you indicated disagree or strongly disagree.

It is quite unclear what this class is about. A/B testing? Causal inference? Data science ethics? It seemed that the class tried to do all of them. However, I don't think the class could have been better if it just focused on one of them and excelled at it.

I think it is an extremely difficult course to teach especially to such a diverse crowd, so I think overall, my experience was positive and we have a lot of insightful conversations. However, personally, I would have preferred to have even more practical applications, like analyzing specific business use cases to discuss what we need to consider to plan an experiment and what questions to ask.

The course is well-structured. The assignments are very helpful.

I think the reading is too much, especially for international students where English is not our native English. The assignment sometimes makes me feel that doing along is much more efficient.

I came into the class not knowing why I was doing this class. At the end of the semester, I definitely feel that I have learned a substantial useful amount and am glad that I took this class.

For some weeks, the reading was too much and repetitive. As a result, I have a hard time picking up any information. Sometimes, the reading covers theoretical beyond my understanding, and just confused me more. (I mean some of the blogs from those tech companies)

Sometimes the readings could be a lot, which would lead to me losing focus on the topic of interest.

I love all those reading reflections, keep them!

Please rate your level of agreement with the following statements regarding the professor of IDS 701.

Scale 1-5, where 1 = strongly disagree and 5 = strongly agree
Note: these items are sorted by mean (from highest to lowest).

Field	Mean	SD	Min	Max	N
The professor was enthusiastic about the course.	4.84	0.36	4.00	5.00	32
The professor encouraged feedback from the class.	4.84	0.36	4.00	5.00	32
The professor demonstrated knowledge of the subject matter.	4.81	0.39	4.00	5.00	32
The professor showed genuine concern for me.	4.72	0.62	2.00	5.00	32

The professor was organized and well prepared.	4.53	0.66	3.00	5.00	32
The professor was effective in communicating course content.	4.47	0.75	2.00	5.00	32

32 Responses

Field	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The professor was enthusiastic about the course.	0%	0%	0%	16%	84%
The professor encouraged feedback from the class.	0%	0%	0%	16%	84%
The professor demonstrated knowledge of the subject matter.	0%	0%	0%	19%	81%
The professor showed genuine concern for me.	0%	3%	0%	19%	78%
The professor was organized and well prepared.	0%	0%	9%	28%	63%
The professor was effective in communicating course content.	0%	3%	6%	31%	59%

Please provide any explanations for the responses about IDS 701 and the professor for that course, especially if you indicated disagree or strongly disagree.

Prof. Eubank is knowledgable. He is enthusiastic about the course, and very good at answering students' questions.

The professor talks too quickly and rarely provide visualized explanation in a systematic manner, e.g., slide summarizes all the key things we shall absorb from the reading. I think we spend too much time discussing everyone's questions that sometimes are not directly related to the content of reading. In this kind of circumstance, I really felt frustrated since I really want to review the content I read or not yet able to finish in time through Professor's explanation in class. However, some of the times, it didn't happen.

Some of the lectures in the later half of the course definitely felt disorganised, in that the professor started went with the first question on the board and continued with the flow. Perhaps this was by design, in that case, the discussions were usually good.

The professor knows way much more than what he can teach us in the class.

None

For some international students who do not have English as their first language, the Professors verbal explanations may be difficult to understand.

Please indicate your overall rating of IDS 701 components.

Scale 1-5, where 1 = strongly disagree and 5 = strongly agree
Note: these items are sorted by mean (from highest to lowest).

Field	Mean	SD	Min	Max	N
Professor	4.63	0.70	2.00	5.00	32
Assignments	4.47	0.71	2.00	5.00	32
Overall course	4.38	0.86	2.00	5.00	32
TAs and other teaching supports	4.33	0.79	2.00	5.00	30
Group Work	4.28	0.87	2.00	5.00	32
My effort as a student	4.00	0.83	2.00	5.00	32
Exams	4.00	0.90	2.00	5.00	32
Texts / Readings	3.94	1.09	1.00	5.00	32

32 Responses

Field	Poor	Fair	Good	Very Good	Excellent
Professor	0%	3%	3%	22%	72%
Overall course	0%	6%	6%	31%	56%
Assignments	0%	3%	3%	38%	56%
Group Work	0%	3%	19%	25%	53%
TAs and other teaching supports	0%	3%	10%	37%	50%
Texts / Readings	3%	9%	16%	34%	38%
Exams	0%	9%	13%	47%	31%
My effort as a student	0%	6%	16%	50%	28%

Please provide any explanations for the responses above, especially if you indicated poor or fair.

I love Nick and the TAs, and some of the readings were quite good by and of themselves. However, like I mentioned above, the objective of the class is not quite clear and the readings didn't contribute that much to my learning academically - the readings were more "cool and good to know".

The quality of the components are great.

I love the topic, but I really hope to have the lecturer 's help of arranging resources for us to learn, e.g., a well-summarized slide, instead of just ask us reading a lot.

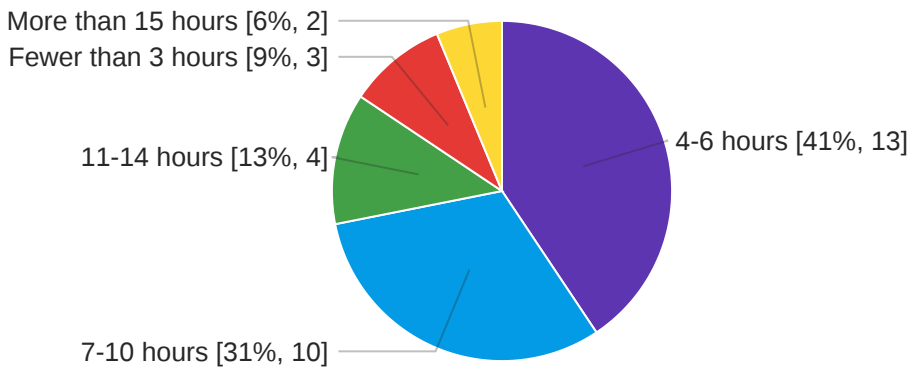
Obviously the midterm was a bit of a mess. I think a lot of it was fair to assess us on, but the time to do it wasn't feasible. I was also upset that potential outcomes wasn't on the exam even though we had been told many times that it would be.

I am just not very interested in A/B testing, or it was hard for me to picture where I can do it really beyond assignment.

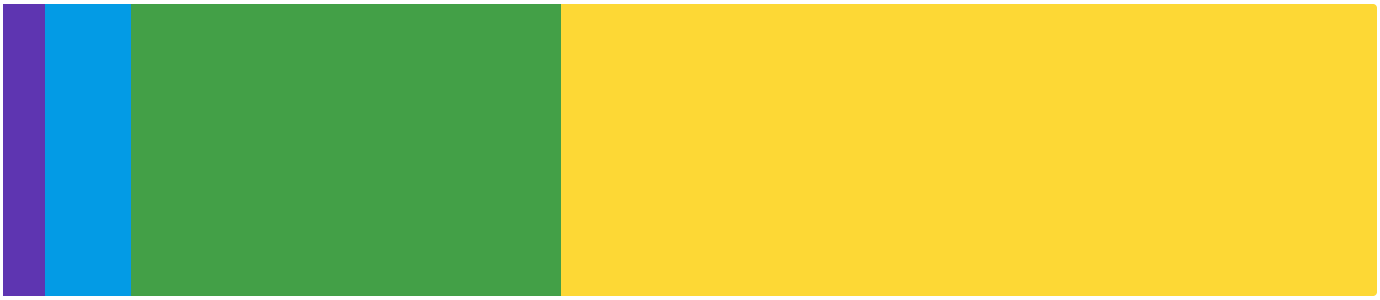
As mentioned before the readings can get heavy.

I'm a big fan of this class, honestly can't think of any improvements

On average, how many hours per week did you spend on IDS 701 out of class?



Would you recommend this course to other students?



Definitely Not [0%, 0] Probably Not [3%, 1] Not sure [6%, 2] Probably [31%, 10] Definitely [59%, 19]

Based on your experience in IDS 701, how much do you feel that you have improved in the following areas?

Scale 1-4, where 1 = not at all and 4 = a great deal

Note: these items are sorted by mean (from highest to lowest).

Field	Mean	SD	Min	Max	N
Applying technical, mathematical, statistical, and domain knowledge to real analysis problems	3.75	0.50	2.00	4.00	32
Collaborative problem solving	3.69	0.53	2.00	4.00	32
Working in teams of people with a variety of skills and backgrounds	3.69	0.58	2.00	4.00	32
Domain knowledge (e.g., economics, medical studies, engineering)	3.52	0.62	2.00	4.00	31
Giving and receiving feedback	3.50	0.66	2.00	4.00	32
Technical skills (e.g., coding in Python)	3.50	0.75	1.00	4.00	32
Mathematical / statistical skills and knowledge	3.26	0.72	2.00	4.00	31

32 Responses

Field	Not at all	A little	Some	A great deal
Applying technical, mathematical, statistical, and domain knowledge to real analysis problems	0%	3%	19%	78%
Working in teams of people with a variety of skills and backgrounds	0%	6%	19%	75%
Collaborative problem solving	0%	3%	25%	72%

Technical skills (e.g., coding in Python)	3%	6%	28%	63%
Giving and receiving feedback	0%	9%	31%	59%
Domain knowledge (e.g., economics, medical studies, engineering)	0%	6%	35%	58%
Mathematical / statistical skills and knowledge	0%	16%	42%	42%

What was the most important thing you learned or most important area of growth for you this semester? Why was this important to you?

The data ethics discussions towards the end of the semester were great. The causal inference discussions at the beginning of the semester were also constructive to my learning.

The most important thing I learned is how to invoke Twyman's law in every statistics we see. :) The most important area of growth - Causal Inference (I never thought there were so many things to consider in a causal inference problems.

I think I did learn a lot but in a unique way. Some portion (post midterm) of the course was extremely helpful in evaluating data science problem critically.

Critical thinking. Nick's class truly embraces the interdisciplinary nature of this course, and the readings/class discussions taught me so much about domains I thought I didn't care about before

The different methods and assumptions of causal inferences.

I learned that Data Science is not all about metrics and prediction performances. We should use data science as a tool to solve practical problems without biases.

What are the potential topics in this subject are what I learned and needed to further grow.

Learned practical skills especially experiment design and asking the right questions which will be helpful in industry.

I feel much more comfortable interpreting coefficients for regressions. Last semester I relied on my team member who had more statistical experience to do them for me, so this was a vitally important skill for me to learn on my own.

I learned to think critically and holistically about the different statistical models I learned last semester. I also learned to translate business problems in a data oriented way.

I think it is really relevant to the internships that I am searching for

Causal al inference

The most important thing I learned is causal inference and the most important area of growth is experimental design. These are important because I learned so many things that I've never thought about before.

One important area of growth was exercising my critical thinking muscle again in terms of reading and questioning content. It has been a while since I have been made to consciously reflect on an idea or story and even question some of the validity.

I think the area I learnt the most is A/B testing part. During the interviews, many companies actually ask questions about A/b testing. It seems to be a big deal nowadays, so I like how Nick incorporate this content this semester.

Wrangling data, designing experiments using a backward design approach.

I did not know much about causal inference, so this course really taught me how to use it in Data Science. As someone who is interested in public policy this is an important field that I will definitely utilize.

This class is rich in technical skills but does a great job of helping us realize why those skills matter

Readings are important

I learnt to read and think academically.
I learnt how to think and how to ask.

I can fully say I understand A/B testing which was something I was looking forward to at the start of the semester. I got a great deal of good interactions on dealing with bias in data which was fruitful.

The ultimate problem of casual inference and its application with real world data.
Estimating casual relationships can help us establish casualty between causes and outcomes.

The most important thing I learned from this course was figuring out what part of data science I enjoyed. I enjoyed AB testing and understanding experimentation design - this is important to me because I was not sure which area of data science I enjoyed. So it is refreshing to see another aspect of data science that I can relate or have an interest in.

One of the most important things I learned was outlining the process of what we want to achieve before actually beginning a project. The backwards design is something that I found very useful and has helped me and my group immensely during the projects. Concepts taught in this class, I don't think I am extremely comfortable with yet, especially, with regard to A/B testing. There is a lot of ambiguity when it comes to applying A/B testing and I think I need to put in some more time for that.

How to use observational data to make causal inference.

I've never formally learned causal inference before so getting my hands on the topic was really important to me. It was also great to learn about how the topics we learn in class can be applied in real life scenarios.

What aspect of the class most critically contributed to your learning?

Reading Research Papers (especially the one on p-value). For someone who comes from zero statistics background, this class was a bliss.

I think assignments made us learn the most.

The reading + reflections helped me think deeper about the concepts we were doing in class

The Q&A session! Prof. Eubank is really good at answering questions.

I think the dynamic of the class is very energetic. I like the discussions which help me formulate more thorough understanding of the topics.

the AB testing parts.

The in-class assignments helped me practice and improve the concepts.

This class is necessary to the MIDS program because it really does unify a lot of concepts that are swimming around your head after the first semester. I really liked how the reading reflections pushed us to make connections to other courses and material that we've learned. It wasn't always easy to do so, so I appreciated the challenge.

The group project at the end brought all my learning together really well not just from this semester but for all of the year.

the in class exercises

Class lectures

The assignment aspect of the class.

The in class assignments definitely, they really solidified the content from the discussions and readings.

I think the exercise in the classes are really contributing a lot to the growth for me. Sometime it's not clear in some concepts but the exercises help me concrete the concepts.

Assignments.

I really enjoyed the in class exercises. I thought that the amount of assignments was very good, especially compared to "Practical Data Science" where we would get multiple a week for the whole semester.

lectures, exam

The readings.

Feedback

The exercises helped a lot in giving me good practice with the material. The discussions were also interesting in cultivating new ideas.

The videos particularly are straight forward and easy to understand

The assignments and midterms.

Reflecting on all our readings, really helped me absorb the material we read. It did at times get a bit much but it definitely was very interesting to read about topics from different perspectives. It was also nice to be up to date with what is going on in the industry, the readings provided were great for that! I am not someone who tends to read a lot but this class helped me get into the habit as well as learn about some very fascinating things

The course website.

Exercises and group discussions.

What could be improved in this class?

Having a clearer objective. See comments for MIDS below.

First half should also include some practical knowledge of A/B tests, which we can improve by including more A/B tests assignments and especially on things such as "what all things can wrong if we don't consider the rules and strategies (baseline difference)" and then perhaps we should go into the solutioning and readings.

More mathematical discussions in class for causal inference models.

I really enjoyed the class, overall. There are aspects of it that are frustrating that have to do with causal inference and not with the way the class is taught, so I don't think it can be helped. In the first half, I thought there were there was too much being taught and it was hard to keep track of the different ideas. But the class we had in making our A/B checklist and the midterm somewhat helped that. I also dislike the reading: 'Trustworthy Online Controlled Experiments', I thought it was redundant and not worth the time I invested in reading it. In the homeworks it would be nice if the questions could be worded clearer; I know some questions are supposed to open to interpretation but the homeworks are graded based on what the TAs/Nick consider the 'right' interpretation so there is no real incentive for creativity there.

The reading was a little heavy for me.

I think that review notes may be posted before the midterm as I had to go through all readings one more time to review for the exam, which requires a lot of effort.

Reading is good, helping us explore the domain is good. However, we need you, Nick, to systematically lead us and summarize for us so that we are in the precise track. Slide for every course or even pre-recorded videos will be a lot beneficial since we need to practice applying this to the interview through the materials you prepare for us.

if possible, decreasing the amount of readings and more in-class group discussions about concepts would help.

Written communication on project expectations/deadlines would be great. It feels like we're in the dark a bit on how we are being graded and when everything is due.

I wish there were some more exercises on practicing inference

the reading....a little bit to much

Readings

Reading materials could be more concise and organized. It is hard to collect all the materials learned from different readings.

Towards the last half of the semester it seemed as though direction sort of faltered. Communication about deadlines and expectations weren't as clear as they had been previously. Additionally, I know there needs to be some incentive for doing the readings (which I actually enjoy and get a lot out of), but sometimes having to do the reflections was a time suck that was not very helpful. I'm wondering if there is a different way to get people to do the readings.

Not all the reading are helpful. Some readings are too complicated and if you don't have enough domain knowledge, it's hard for us to comprehend. Also, it'll be better if the rubrics or the method of determining whether a reading response is good is posted in the beginning the semester.

Readings could be more targeted.

I think I learn better with more in class explanations rather than learning all from the readings. I like readings as important background information but like a more lecture based learning style as well.

There was one point in this semester where this class suddenly got very heavy at once, with project prop due, exam, and reading reflections. would be helpful to move project proposal farther from test

NA

NA

More video related materials.

I wish the classes can be more lecture based rather than a discussion and in person assignments. The class assignments can be done outside out class (in our own time). It would be beneficial if the professor can lecture on the topic in a more lecture based styled environment instead of discussions.

The assignments, while great as learning tools tend to have very vague instructions which can be open to interpretation. This sometimes results in a person getting an answer which was not the desired result. Some of the readings, also have some typos which tend to affect the understanding of what the essence of the reading is and take away from it or in some incases imply something that it was not meant to imply.

I'd be happy if the modes of communication could be reduced. I find it very hard to make sure nothing slips through the cracks between Sakai, Ed, slack (especially here, please don't make announcements on slack, it's impossible to search and very glitchy on mobile devices), email, GitHub and in-class communication.

The professor's verbal explanation.

I wish we could've had more exercises in the second half of the semester rather than only having discussions on the reading material.

Is there anything else you would like the professor of IDS 701 to know?

you are the best, Nick :)

Great job overall! I think its a very hard subject to teach but the enthusiasm and domain knowledge with you approached each class made the experience very enjoyable. The last few classes made me deeply pessimistic about the world we are heading into but its nice to be aware I guess.

Thank you! It is a great course! I learned a lot!

Already wrote a lot on above.

Thankssss Nick!!!

class period should not be entirely q and a for some classes

Thank you so much!

Great class, Nick :)

N/A

I think the style of this course was much better than last semester. The balance between assignments is better and I liked the reading responses compared to the quizzes. The reading responses were a lot less stress inducing but still showed that the reading was completed.

I really like how the way we were selected to groups, helps me know a lot of people.

The reading materials were top notch.

Great job Nick. Thank you for ensuring that no man was left behind.

Great lectures

Genuinely glad I took the course, but I just wish the classes were more lecture based instead of doing readings in our spare time and having a short discussion at the start of each class. I also think there was too much of an emphasis on the reading reflections - I find that I had to come up with questions or thought provoking curiosity just to answer the reflections. There are times when I read the readings, and I really just dont have any questions or things I found confusing.

The class discussions have been my favourite part of the class this semester, however since these discussions are primarily in English and the pace of discussion is much quicker than usual, I have noticed some of the students whose first language is not english have had difficulty in keeping up with the conversation.

I appreciate that he goes the extra mile to make sure that we have a thorough understanding of the field.

Is there anything else you would like the MIDS program to know about this course?

Nick is a great professor and the contents of the course themselves were quite good. However, the biggest problem of the course was a lack of clear objectives.
1. The course didn't quite "unify" data science.
On a high level, the course covered 2 main topics, causal inference and data ethics. To be fair, it unified different methods of doing causal inference and unified data science in the sense that data science practitioners from all fields should beware of the multitude of ethics issues. However, I don't think that's exactly unifying data science. Based on the course descriptions and the syllabus, the course seemed to have wanted to bring a unifying view to different domains that practices data science. For example, I would've loved if the course surveyed how DS is used in different fields, what people in different fields care about, and the different tools that people in different fields leverage due to their different goals. The course in its current format was still okay, but a more appropriate name might have been "Causal Inference and Ethics", instead of "Unifying Data Science". Essentially, I don't think the content we covered in the semester does justice to the course name.
2. The course is quite dry for people with a background in Economics
Given Nick's background, it's totally understandable that he approached causal inference from an Econ perspective. However, it was very repetitive for people with a Bachelor's in Economics. Almost all of the causal inference content was covered in an undergrad level econometrics course. Given the number of students in MIDS with an Econ degree, I don't know if it's best to make what's essentially a mini econometrics course a core requirement. Also, Nick was considerate of people without an Econ or math background so he tried to skip a lot of the math, which meant that advanced undergrad econometrics courses would've covered the same material in more depth. See the next point.
3. Trying to teach causal inference without math is just difficult
Causal inference and econometrics involve a lot of math. In this course, Nick tried to cater to people without a background in math so we skipped a lot of the math. While I totally understand the reason, I don't think this strategy worked well. A lot of times, we were scratching the surface. I understood the materials because I took econometrics in college and I was auditing Causal Inference in the stats department. However, had I not done those, it might have been hard for me to really understand the causal inference methods, such as instrumental variables, just from the readings and the exercises.
4. The exercises were a little too hand-holding
The exercises were in the exact same format as the Practical Data Science with Python from last semester. The format worked really well last semester because one major objective of the course was to teach Python, and coding with training wheels is a really good way to learn to code. However, the objective of the causal inference portion of this course was not to learn how to code, but to learn the methodologies. With the amount of hand-holding in the assignments, one could've just followed the instructions about what to do and what variables to add, got to the right answers, all without fully understanding the methodologies. To be honest, from the group work, I don't think some of my teammates fully understood a lot of the methodologies we covered.

Please feel free to share this with Nick! Would love to see the course improve year over year.

Very good course. This course has a huge potential of making it a big success with more discussions and brainstorming sessions.

This class is another reason IDS 720 should be made a core course

Great course!

This course is an important subject, but I think the content shall be re-organized.

N/A

I love how this class works and what it teaches. I think it set me apart as an interviewing candidate at companies because I was able to respond more thoughtfully

I think this class is useful for data science analytics

N/A

I enjoyed this course as one of my core MIDS courses.

super great ! i wish more student can take this chance!

This was a great course.

It is a great course

I wish there weren't in class assignments. The assignments can be done outside class and we can utilise that time spent in class assignments for more interaction and teaching by the professor.