This report contains feedback from students about a course taught in the School of Informatics during the 2020/21 academic year, in response to the following questions:

- What advice would you give to a student taking this course in future?
- What did you find most valuable about the course?
- What improvements, if any, would you make to the course?
- Please add any other comments you have about workshops, tutorials or labs on this course
- Please add any other comments you have about the presentation of course materials online and their accessibility
- Reflecting on your experience of hybrid teaching and learning on this course, what has worked well for you?
- Is there anything else you'd like to tell us about your experience of hybrid teaching and learning on this course that would help us improve our approach?

Each course organiser receives this report as well as statistics on multiple-choice responses. All these reports, together with student feedback about individual members of teaching staff, are collected and sent to the Director of Learning and Teaching.

Please note that these are personal responses from individual students: some courses only have a few responses and a small sample can be unrepresentative.

Stereotyping and bias, especially unconscious bias, is a serious concern in any survey gathering personal responses. All students received the rubric below before completing the surveys, and you can read a brief introduction to issues of unconscious bias on the university web pages at http://edin.ac/2iyPZBv

This information is provided for students and staff at the University of Edinburgh: you may not redistribute or reuse it without permission. If you would like the information in another format or want to use it in your own publication then please contact the Informatics Teaching Organisation at http://www.inf.ed.ac.uk/teaching/contact

### Rubric given to all students taking the end-of-course feedback survey

We value your opinions on the courses you take here at the University, as they allow us to shape future delivery and development. We welcome constructive comments about your courses, whether positive or negative, and ask you to give details about any issues in order to help the course organiser to understand and address them.

We encourage you to be aware of the potential for bias in the completion of these questionnaires, so we have developed resources which may be helpful to you:

- Equality, Diversity and Unconscious Bias (http://edin.ac/2iyPZBv)

You also have a responsibility to provide feedback in a manner which does not breach the University’s Dignity and Respect Policy:

- University of Edinburgh Dignity and Respect Policy (http://edin.ac/1Cq0VZY)

The results of the questionnaires will never be analysed in a way that seeks to identify individual students from their responses. However, should you wish to remain anonymous, please do not identify yourself in your answers to the survey questionnaire implicitly or explicitly.
1. Introductory Applied Machine Learning [INFR11182_20-21_SS1_SEM1_ONLINE_CACORE19] -

What did you find most valuable about the course?

- "Hands on" experience doing ML with the labs.
- My particular tutor was very helpful and well-prepared for our meetings.
- I appreciate that we had the chance to practice using matplotlib extensively (though it seemed like there was too much emphasis on this, compared to theory).
- Breath of topic was good
- Coding exercises.
- Good lab content and answer and Good lecture Q&A section
- I learnt a lot of new information, and the labs were great for developing my technical skills
- I liked the professor's accent. My tutor was pretty good in the tutorials.
- It was a good introduction to Machine Learning, which was useful with someone coming in with no background in the field.
- Labs were very useful in being able to practically apply the knowledge learned in lectures.
- Learn how to use python.
- Lecture videos, quizzes, ability to attend weekly live Q&A
- The course forced me to learn a lot on my own, so over all I learned both python and machine learning but I did it all on my own. I found the lectures, labs tutorials and class meeting unhelpful and badly organised and they did not help my learning at all. It was supposed to be applied machine learning, but lectures focus on maths behind it not, applications. The coursework was way too hard compared to what was shown in the lectures. I also had troubles understanding what I'm actually supposed to do in a given question. Considering how many clarifications had to be given for coursework, I believe questions were badly phrased. Feedback for coursework 1 was unhelpful so I still don't know what was expected from in questions I answered incorrectly.
- The coursework is well designed. In these coursework I learned a lot and my abilities and skill got improved.
- The coursework and the labs were very useful in understanding the concepts.
  Victor Lavrenko's videos were really good, and Q/A sessions were very useful!
- The labs
- The lecture structure, being able to go through lecture notes at your own pace before the class, then the class being used for questions after everyone had a chance to go over them.
- The practical side was good, and Dr Lavrenko is a great lecturer.
- The practical training it offered.
- The practicals were very good and usefull
- Tutorials - My tutor was very good.
- Tutorials and Labs were both very helpful for getting hands-on understanding of the theoretical elements.
- some of the tutor (either labs or tutorials) were very helpful
- the quiz and the lecture
14.12.2020

EvaSys Evaluation

What improvements, if any, would you make to the course?

- The flipped classroom method is not good, and the lecture videos should not be limited to the time constraints of previous year's in-person lectures. There should be no time limit on how the material is presented to ensure that everything is elaborated on in depth.
- Live classes introducing the material, rather than reviewing, are preferable.
- Coursework, especially this year, should have been pairwork. It was far too isolating to not be able to meet up in groups as it was, and the course staff's reluctance and sometimes hostility to answer Piazza questions was antithetical to the support we expected to receive in whatever this "hybrid learning" situation was.
- Marking was pedantic. Reporting a score as 0.91 instead of 91% in a table should not justify a deduction, as it does not reflect understanding of ML theory.

Due to the epidemic situation I thought the course did not show us the greatest part, which is the lectures. I really want to enjoy the lectures on campus.

First of all, the assessment structure is not balanced according to the average course at this university. Two serious and demanding assignments due while new material is being introduced is onerous, especially given ANLP has a similar structure. When an assignment is released, I have to stop doing EVERYTHING for a week just to focus on it, to actually get it done for the deadline. Yes, everything: that means completely disregarding all my other classes and weekly materials and ONLY working on the assignment, many hours per day, for a week. You might say "we release the assignments well in advance" but this is rubbish since the course materials needed to actually do the assignments in the first place is only released a week before the deadline.

Second MAJOR improvement:
The math in this course is excruciating. Even Dr Lavrenko who is otherwise a great lecturer completely fails to make the math interesting or clear. I have to stop myself from falling asleep every time math is mentioned in this course. Yes, many students have taken 3 years' worth of mathematics in their Informatics 4-year degrees, but as a Master's student from a completely different background (Linguistics) the last time I did any proper math was 5 years ago, in high school. I know there are mathematics requirements but you should actually enforce them by REQUIRING a math module or equivalent to have been taken by the student prior. So either enforce the requirement or go more practical with a focus on implementation e.g via Python libraries instead of the low-level mathematics.

On Communication
Firstly: I got a good score on the (first) assignment, so I'm not just venting my frustrations here. That said...
The assignment questions seem to have been written by somebody who is indeed very intelligent, but has the communication skills of a brick wall. There are so many ambiguities and completely nonsensical statements (e.g "use X, which we found in the previous question", when X is not even mentioned in the previous question) in these assignments, which makes even interpreting the questions correctly half the battle!
Another serious problem with the assignments is interpreting the rubric. Because there are X things the marker looks for per question, yet as the student I am left guessing what those things are. "Discuss your results briefly" is not enough indication of what is expected. I seriously can't comprehend why you thought having such open-ended questions but with a specific rubric of accepted answers was a good idea.
Additionally, my experience with your PhD students has been extremely poor. Not only do they mark assessments like absolute thugs ("your answer was one sentence too long? One point off! You had the audacity to include a plot to better illustrate your point? Two points off for resizing the answer box too!") but they are also absolutely useless at interpreting and answering student questions.

I completely understand the challenges of presenting a course like this to so many students online. However, one of the lecturers wouldn't let us use the chat to ask questions (without our hand being up first), or answer each others questions. I understand that looking at the chat could be distracting for the lecturer, however, we're all having to adapt to working remotely, not just the lecturer. I found being able to answer classmates questions, or seeing what other classmates were asking, extremely valuable. It made up for not being able to speak to each other face-to-face after class. The lecturer not allowing us to do that felt unfair.

Introduction of office hours or smaller class sessions so more focus is given to students and their questions.

Lectures should have adjusted subtitles, not automatic ones. The automatic ones make no sense. The level of difficulty of coursework should match labs and lectures. Lectures go too fast. There is a lot of maths there but it's poorly explained. Especially linear regression lectures are terrible. There is too much material. Its 20 credits course, I worked on it as if it was 120 credits one.

Less maths!!!!!

Less students. The ratio of students to teachers made feedback nearly impossible during the course so we were left fending for ourselves. If machine learning is so popular then split it into two courses, one for postgrads and one for undergrads. Felt the pace could have been higher. I come from no background in the topic and with the course layout I was only able to take this course. I would either prefer to have this course followed by a more advanced one in term 2 so I could get more into the topic. Or increase the pace of this one to get us to a higher level; it feels a little low level for postgrad work.

Live lectures, not just Q and A

More worked examples for application of the maths!

No

Personally, I struggled in understanding exactly what assignment questions were requesting sometimes. I am coming from a biological background though, so it could be my little experience in the field, driving this.

Please spend more time preparing CW2, it was wrong as clear to what was asked. Compared to previous years CWs the instructions were poorly written, with a lot of ambiguity in what is being asked. Potentially have a lecturer/ teacher/PhD students answer the questions themselves, someone not involved in the preparation process to see if they can understand what is requested. Either give more information on what analysis you want (therefore we know how to do the experiment), or give us clear information on the experiment (therefore we know what analysis to do). However CW2, missed both experiment and analysis information, therefore requires some sort of EM algorithm for students to decipher.

Also some of the pre-recorded lecture videos were not well delivered, lacked enthusiasm and the content skipped critical steps in the
Prepare for very harsh criticisms. I felt this course was terribly managed and that we were not given the tools to succeed. VERY IMPORTANT: Workshops cannot be only 1 hour with one tutor distributed amongst 10 students. I mean, common sense mathematics puts that at 6 minutes per person, in an online format where it is already difficult to explain things. I managed to ask a total of one question in the 4 workshops I attended. ONE! Those sessions are supposed to be the ones in which we learn the most, and instead I didn’t learn anything.

A comprehensive set of lecture notes/slides should be provided to students (not just for this course… every course should). I never felt that I had enough information to complete any problems we were assigned throughout the course. EVER. The lectures do not entirely explain a topic, and the pre-recorded videos essentially read the information straight off the slides, which themselves did not have enough information. Nothing I saw in a lecture was useful in answering tutorial questions because we simply weren't taught how to do the types of questions we were being asked.

The format of questions in the tutorials was very different from how it was taught. The released solutions did not explain the problems at all.

The live lectures were, for the most part, a waste of time and added little value to the course.

Release workshop solutions on Friday at the end of the week, not Monday the next week. My workshops were on Friday and tutorials were Monday; I wanted to be able to check my solutions over the weekend so I could then focus on the tutorial come Monday. The workshop solutions to a workshop that was relevant to submitting the first coursework were not released until 28 hours before the deadline. We had no way of knowing how well we were doing with our use of certain machine learning functions.

The length of workshops was excessive. Was I supposed to spend 10 hours on each one? We aren’t given enough information to complete these workshops on our own and the workshops themselves do not prepare you for the coursework.

The coursework was ridiculously long and we were not given enough information to thoroughly answer questions, or even answer some of them. I left 20% of my last assignment unattempted because, despite being up to date on all the course material, did not feel I was prepared to understand or answer it. There is no way each coursework was supposed to take the roughly 40 hours it took to complete.

Slides should be thoroughly checked and updated regularly, even the assignments had numerous typos in them. And allow us to post questions about coursework on Piazza, you are far too paranoid about cheating.

Some videos have extremely low volume

The course content was unattainable.

The coursework should have more instruction. Otherwise, it just a Google coursework, we have to learn the methods and examples of the lib and function what will be use in each one sub-questions. Meaningless for the time I spent.

The coursework was very strict, we were not able to ask any questions relating to the coursework. I think I would have learned more from the coursework if the lecturers allowed questions to be asked on Piazza.

The lectures are outdated and bad. I have to look for alternative online courses that explain concepts better, for instance the SVM lecture was absolutely terrible compared to this https://www.youtube.com/watch?v=_PwhiWxHK8o for example.

Additionally, Nigel sounds like he's too smart to teach us. Listening to his lectures you can feel a condescending tone unique to white men doing informatics.

There is a big issue with communication between instructors and markers in this course, and between instructors and students. I understand that this is a very large class and that this inevitably means that a larger group of people will be involved in the marking process so communication may be difficult, but this should be more of a priority. On many occasions students have lost marks because of inaccurate grading, which we have been told would not be addressed.

Related problem: several times I have asked for explicit clarification about what would be expected on a question, and the response I have been given (and that I have followed) has led me to lose marks, because apparently there was no clear consensus among different instructors/markers about what marking expectations were.

I also find the explanation that “some markers are more lenient and some markers are more strict, so they will average themselves out and there will be no overall effect on marks” is a bit ridiculous. There would be no need for such an excuse if explicit marking guidelines were established, so markers, strict or not, would just have to follow those guidelines.

I also find it unacceptable that the instructors explicitly refused to address incorrect marks. Sure, like they said, "it only concerns 1 or 2 marks", so not a big percentage of our final mark, but this over both coursework will definitely affect the final mark. And just for the principle, it feels incredibly dismissive and unfair that we are outright told to just "deal with it" when there are obvious marking inaccuracies. There has to be a solution for this. This is the first time after 5 years of studying and having been in very large classes that I’ve seen instructors dealing with marking problems like this. If there are over 20 PhD students acting as markers, then let the students get in contact with them directly over inaccurate marking, and I guarantee that this will motivate the markers to be more careful with their marking as well.

A last point about instructors not wanting to give out "hints" to students about coursework on Piazza. I also found this very strange and a bit disappointing. I agree that there should be a limit to this, and we are aware of that. We don't expect instructors to give out solutions. But flat out refusing to even give out advice as to how to approach a difficult problem that a lot of students are asking about, or refusing to even say "yes" or "no" to whether a student’s approach is correct is a bit much. I find it ironic that the instructors’ reason for this, supposedly, was to "prevent cheating" and "prevent being unfair to other students", when all students have access to Piazza.

This leads to a very strict and stressful atmosphere that takes all the fun out of learning and discussing, and this also in facts leads to students taking to other platforms to discuss coursework amongst themselves, since instructors refuse to give out hints.

There is such a long list that it is embarrassing. This year course clearly suffered of another change of direction in respect on what the course was in there past. However, the recorded lectures, labs and tutorial remained the same. Despite this, the lecturers changed the
difficulty and the emphasis on the topics of the courseworks. Instead of "intuition" type of course as an introduction to ML, it has become a math course towards advanced ML. The worst part is that the lecturers did not give the tools to learn or to solve the challenges, and they even did not consider the added burn of a fully remote course with no interactions on campus. They were unhelpful to said the least, inconsistent on how they answered/not answered to students on piazza, absolutely equivocal and ambiguous in their phrasing of courseworks and not willing to clarify.

- You can't call it "applied machine learning" when we don't actually apply machine learning. This was a data science & visualization course. It was a false description for a completely theory driven course.
- Assignment document is too long. Assignment is too much and difficult. The marks standard is unclear and not provided advance.
- I know it's hard, but office hour could be really helpful
2.1) What advice would you give to a student taking this course in future?

- Back yourself and take a more advanced version if available to you. If you do take it and class size has not decreased be prepared to teach yourself.

- Completing the labs makes the coursework much more familiar

- Do not miss the tutorials or the labs. Try to debug your code by searching for solutions online if you get stuck. Quite often, someone else out there had the same issue as you and someone helped them efficiently.

- Do not overthink the questions asked in the exams or the coursework. Trust course organisers when they say that the questions are straightforward and not meant to mislead, so overthinking questions does not help at all. Pay attention to visualization, it will be handy in future as well.

- Do the quizzes, and actually try and understand them. Oh, and write tutorial notes neatly if photos are going to be taken of them!

- Don't take it unless serious changes are made.

- Either 1) don’t, or 2) absolutely make sure you have taken math courses previously because these people cannot be bothered to give any human-comprehensible explanations.

- Find a different course if you want to learn to apply machine learning.

- If you can tolerate only self-study content, please choose it. Usually this course is not worth your choice.

- If you don’t have excellent maths and python skills, don’t take it.

- It would be helpful to approach this course with some coding experience in Python. The course is very hands-on so do not expect math rigour at all.

- Keep up to date with the lectures, and do not rely completely on the lecture materials. Andrew Ng’s YouTube videos are parallel to this course, and would benefit to watch those too, for further understanding. Labs are the most useful aspect of this course, it really helps to apply the knowledge, definitely check them out!

- Listen to the lectures carefully and getting involved in the tutorial is significant. Labs are also playing an important role. Courseworks may take a lot of time, so it should be well scheduled.

- No

- Read the books, most of your coursework can be done by reading the chapters by yourself. Look for other sources to learn about ML eg. online courses, because the lectures are a bit outdated and badly explained.

- Simply do not take it if you can.
  If you can not, find an online course to learn and hope for the best.

- Take labs and tutorials seriously

- The marking is unnecessarily strict for things that aren’t related to ML theory. Be sure to read the assignment instructions carefully and ensure you are meeting their arbitrary requirements.

- The professors react poorly to questions, so make the effort to get to know your classmates, they’re the only help you’ll get.

- This course is a bit on the easy side. If you want a challenge, go for MLPR

- good luck.

- know python in advance
Please add any other comments you have about workshops, tutorials or labs on this course

- I found the labs useful but often very time consuming. The tutorials I found very challenging, I often failed to answer correctly as I don't feel confident with some of the maths we've been taught. We had time to go through it in the tutorial sessions which was helpful.
- It didn't work in online setting. It would be useful if tutorials were used as office hours, so students can ask questions about stuff that were unclear in labs/lectures.
- Lab sessions with tutors were not that useful, but the actual labs notebooks were helpful.
- Labs and CWs are very useful in understanding the topics
- My tutor was helpful, though I've heard others weren't. I haven't heard of anyone saying their lab was helpful.
- Not enough time for workshops. Tutorials were good, but not asked in ways that were helped by the lectures.
- The labs tutor was incredibly helpful and very clear in his explanation.
- The labs were really helpful at improving my skills. However, more help needed to be given to those having technical issues, especially when setting up the environments and getting things to run correctly on their system.
- The labs workshops were very poor. The tutorials we're brilliant.
- The publication of the answers of the tutorials could be more easy attached.
- Tutorials can be a hit or miss depending on the people attending
- Tutorials were good. Labs, only good if you had a question, as other students asked their questions in a private room. Open up questions so everyone can see what is being asked as it may help them
- the workshops and the tutorials were ok
4.1) Please add any other comments you have about the presentation of course materials online and their accessibility.

- The flipped classroom approach is frankly lazy. If it's going to be kept, the absolute bare minimum that could be done would be to update the lecture videos with longer, in-depth explanations and thorough examples. There is no reason for them to be limited to previous years’ in-person lectures.
- Stop cutting the videos so short. It's disorienting, and gives no time to pause a video before the playlist automatically transitions to the next one. Very frustrating.

Accessibility was good, presentation was poor. Instructions for coursework submission were overcomplicated. Asking for code submission in python templates added additional stress to the coursework. The coursework itself was very difficult. Submission should be way more easy.

As I've said:

Some of the pre-recorded lecture videos were not well delivered, lacked enthusiasm and the content skipped critical steps in the method for understanding, showing an example in the pre-recorded lecture would help (since students will understand the concept fully).

Content needs to be updated (majority of Victor Lavrenko's videos are from 2015 - and available on YouTube anyway!)

- Basically useless

- Course lecture material was good, class sessions were a bit random I thought.

- I think that the quality of lectures could be improved. Pretty much all of the learning materials were just pre-recorded lectures from previous years.

- It is not intuitive where to find many things on Learn! In particular the assessments and the lecture recordings could be signposted a lot better.

- The lectures were sometimes very slow, it seemed the

- The live lessons were messy and the criteria for choosing the question not clear (i.e. did they choose questions because they were going to be helpful for the exam or because they liked the type of questions?). At times, after an explanation, it was said that the question was not examinable...did we do it for fun? The idea that lecturers passed on was that they were willing to teach to advanced students who had a special interest in going deeper, instead of teaching the whole class the basics and ensuring everybody had building block to move on their academic understanding and career in ML.

- The other lecturer (i.e not Lavrenko) needs to turn up the audio of his lectures.

- The videos were often hard to read because the writing on the slides was too small.

- There needs to be a comprehensive set of information for the course.

- There was a lot of content for just a 20 credit module. The live classrooms we're not helpful and often confusing, particularly when the lecturer was writing with their mouse, often the figures were illegible.

- These parts are processed with no problems in my opinion.

- good
7. Introductory Applied Machine Learning -

7.1) Reflecting on your experience of hybrid teaching and learning on this course, what has worked well for you?

- Again, it was the tutorials and Labs mostly. Lectures were also good but often we did run out of time before covering the material.
- Being able to learn the course material before the lectures.
- It was not “hybrid”, it was all online. I appreciated the “live lectures” at first but soon realised they are not actually lectures, just “consolidation sessions”, which is a bit of a waste. Give the lectures live, and have labs or tutorials in person.
- Lectures to digest in my own time worked well for me.
- Live sessions are very helpful.
- No but because of the lecturers expectation and their desire to transform this introductory course in a more advanced course.
- No.
- Pre-recorded lectures are a good idea. labs/tutorials should be in person.
- The course was online only. The accessibility was easy
- The online materials are quite convenient and useful for me.
- The tutorials felt a bit awkward at times being completely silent. The lectures were too hectic before the lecturer insisted on people raising hands, but then too slow after that, seemed not enough content was covered in the lectures. I liked having the combination of synchronous and asynchronous learning. The labs made me feel prepared for the coursework. I would have liked more worked examples in the lectures as I found the tutorial work very challenging and I don't anticipate doing well in the exam as a result.
- Tutorials
- this course is not hybrid teaching
Is there anything else you'd like to tell us about your experience of hybrid teaching and learning on this course that would help us improve our approach?

- Consider the actual situation and reduce the difficulty appropriately
- Felt lonely and unsupported at times, again due to size of course.
- Give students a chance to talk to each other after lectures in the class, even just 5 minutes at the start or end where the chat is open and we're allowed to talk to each other. Not being able to do it felt isolating.
- Hybrid teaching? Are you actually serious? What in the world do you mean by hybrid? You mean "online". We had to pay full fees for an online course.
- It's just not as good. I know we don't have a choice, all I'm asking for is for you to acknowledge it's significantly worse than face to face.
- No
- Pre-recorded lectures from previous years do not feel good to watch... even if those videos are good, I feel we should have updated content for this year.
- Real-time caption could be helpful during the online courses.
- Smaller class sessions so that more attention can be given to doubts. Some doubts are better answered in person (or live) rather than over a forum. The way the organisers scheduled the class sessions this time was by coming prepared with some extra details for a certain aspect of the week's reading, and go through that while simultaneously answering doubts. This could be changed to making the extra details an extra video for the student, and devoting the session fully to doubts.
- The communication in this course is quite bad. Assessment questions are not clearly articulated, teaching is hit-and-miss in terms of getting the point across when mathematics are concerned, staff do not answer questions well, etc. I understand it may be difficult to find people with good communication skills in Informatics, so this is certainly an area for improvement.
- The live classrooms we not helpful
- The prerecorded content was not as well edited as other courses (tinny audio, large jumps in volume, etc.), so this could use some review.
- The way the MSc is structured here is very disorienting, and without being able to attend in-person lectures and get a routine it was a very rough start. In particular, the alternating tutorials and labs were extremely confusing for the first half of the course, especially the numbering scheme. Another course accepted our mid-semester feedback and renamed the tutorials and labs according to the week they are due, which greatly facilitated our organization.
- This course was not fun. The coursework could have been more interesting. A lot of theory, less "applied" ML
- no
11. Thank you -

Thank you very much for taking the time to complete this questionnaire. Your response and comments will be fully considered.

Please provide any additional comments you may have about the course, the teaching on the course or the resources that support it in the box below.

- Every interaction with a prof from this course has been a struggle. Many questions from students received condescending and sometimes rude responses. Any extra help/clarification was given with an air of reluctance. Please go easier on your next class and understand they just want to learn, not cheat.

- Felt this was a missed opportunity for postgrads on an AI degree. Feel a bit short changed by my depth of learning in this area.

- I think the lecturers should seriously reflect on their performances.

- I was disappointed with the cryptic or inaccessible responses we received on Piazza. It felt like we were on our own, when we would expect some more detailed answers and examples when asking for help. In particular, reiterating the formal definition or equations from the slides is not helpful. Since there were no office hours and Piazza was our only interface for communicating with the instructors, it was kind of a slap in the face since we expected to receive just as much support this year as any other year.

- No comment on the individual staff members above; because of "online teaching" I have not had the chance to interact with any of them in any significant capacity.

- Since this year is very special, in fact, we can't enjoy many resources. I hope that the final exam can be simple and don't fail.

- The excuse often given in this course is along the lines of "we can't give feedback because there are too many students". Well perhaps there are, but I pay full fees and get no discount for sharing a course with a lot of students, so I expect no excuses.

- The level of passive aggressiveness and straight up rudeness of replies on Piazza made me lose respect for the people who were supposed to be teaching me.

I don't feel like I learned anything, but I spent so much time and energy on this course.