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

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**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. Natural Language Understanding Generation and Machine Translation

What did you find most valuable about the course?

- A deep understanding of natural language understanding.
- All methods covered were very recent.
- Good concepts. wide range. well seperated as per the use- understanding, generation, MT
- Having practical experience of the theory in the coursework (RNNs, self-attention, etc.)
- High quality content, good structure/organization. I liked the focus on state of the art methods and the focus on recent papers. Teaching staff is very responsive and helpful, and I greatly appreciate that they are open to helping out/giving hints on coursework questions to make up for the difficulty of the coursework. I especially loved Mirella's lecture style, it was very engaging, which made it easier to keep my focus.
- Interesting and useful topic.
- Interesting content, covers a lot of research results and topics in NLP
- Interesting topics and challenging coursework
- Lecturers willing to answer questions at live sessions.
- Material was great, very interesting.
- Quality of teaching
- The most helpful areas to me I am not sure if they were even part of NLU+. They were the extra sessions on ML techniques
- Tutors are very nice! Courseworks are challenging but worth efforts. All the stuffs covered in the lectures are soa and would be useful for our future development.
What improvements, if any, would you make to the course?

- Be compassionate to students. More thorough feedback for coursework if you’re capping marks.

- Even though I met the requirements, I felt very ill-prepared for this module. Initially I had planned to take IAML as a concurrent, but I was not allowed to do this. As such, having not much ML experience I was at a loss of how to start the first assignment until the extra sessions began, which cost me a week. I also felt there was a disconnect between the level of python skill CPSLP provided and that required for this course. This course assumed a familiarity with a number of numpy techniques, but this was not covered extensively in CPSLP. I would recommend coordinating more with the requisite and co-requisite modules to make sure they are preparing students with the right materials for NLU+.

  Also, I felt assignment 2 had too little implementation. Deciphering someone else's code I do not find nearly as useful as implementing something myself. I understand the transformer architecture is complex, but maybe we could have implemented the LSTM in assignment 1 instead of the RNN and then expanded it to the transformer architecture in assignment 2, or maybe built some of it in labs, as we did in ANLP.

- Have live lectures and more interaction with students. Replaying lectures and tutorials every other week meant this course really lacked a sense of community and engagement.
  Also the marking was very poor and inconsistent, questions that received nearly all positive feedback got very low marks

- I believe there should be more communication between who teaches the course and who prepares the coursework/exams/tutorials.

- I liked the concept of the weekly Q&A, but I would have liked to see more prepared content in case not many people had questions. It could be a good idea to have an exam-style question related to the week’s material that the lecturer could work through in the Q&A session. I think this would also boost attendance and in turn, lead to more questions being asked in those sessions.

  I found it a bit unfair to have the last, "optional" question in coursework 1 be 35 points, with a disclaimer that the majority of people would not get more than 10 points out of 35. If you choose to include a more difficult, optional question in a coursework that you even encourage people not to attempt if they are out of time, it seems unfair to make that question be worth so many points. At least decreasing it to 30 would make the maximum mark without the question a 70, which is at least more fair than 65.

- Less required reading, no paired coursework. Slow down a bit and keep going until week 10?

- The Class Test was a mess, please do not give out multiple-choice questions in this manner ever again. The questions were posed in an egregiously vague manner, resulting in arbitrary binary marks. The next year's Class Test should have open-text fields, like the ANLP Class Test.

- The coursework were very challenging to understand because of huge amount of code that wasn't clearly explained. If coursework are so coding-heavy then it would be great to have weekly/bi-weekly coding exercises/tutorials to prepare students for these coursework.

- There were some technical issues with the recordings. When students are supposed to use recordings as source for learning, the volume must be at an appropriate height. Also, since some lectures were recordings of in-person lectures, the lecturer used pointers, which were not visible in the recordings. This made the material sometimes unnecessarily hard to understand.

- Tutorials were not very interesting, running them more similar to the ANLP tutorial would have been more interesting and increased attendance

- Well-constructed code for coursework 2.

- Wouldn't make the mid-term be a multiple choice test with ambiguous questions. Should allow for free-form answers allowing users to write down their thought process.

- it's easy to show something in diagrams. Even while doing the math, you're just describing half the variables. But while coding, so many variables got mixed up, that was hard.
2. Natural Language Understanding Generation and Machine Translation

2.1) What advice would you give to a student taking this course in future?

- have good knowledge of basic machine learning
- practice programming continuously

Be serious and take more time!

Do coursework with a partner if you are not very confident in your programming abilities, otherwise you are probably fine doing them on your own (if you don't want to waste time trying to delegate/discuss each other's work and would rather put more time in by yourself). Courseworks tend to be difficult but it is in your best interest to try as many questions as possible and show any work done, as this could win you a few points throughout. Overall this is a time-consuming course that is more on the challenging side but you will really learn a lot about modern techniques/current work.

Don't take this course if you are not confident with python, numpy and pytorch. There is a lot of coding and code understanding in coursework and even ML-focused students are having hard times.

Interesting content

But was all replayed lectures from previous years, I would take another course so you can get some interaction and teaching and audit this course.

Also the marking is quite bad.

It is a lot of work, and you do need to have quite a lot of background knowledge.

It's more work than you think it is. This may be due to the online delivery of the course.

It's harder than ANLP!

Keep on top of lecture material, it moves fast and complex.

Learn a lot about ML techniques, numpy and pytorch before you start the course. The requirements aren't enough!

do it. but don't think its the same as INF-2A. its a continuation and a leap forward.
also, it's very time-consuming.
3.2) Please add any other comments you have about workshops, tutorials or labs on this course

- I did not have time to do any of them. The course was very time-consuming.
- The tutorials I enjoyed and found helpful. The only thing is it's difficult to discuss maths in general online - I got a lot more from discussion oriented questions, these were more present in ANLP.

I did not find the QA form of the labs helpful. The QA format has been very impacted by the move to online, I find it very difficult to acquire general intuitions for things and therefore cannot condense what I don't know into a single question. The ANLP labs, where you implement something simple, were better.

- The tutorials are helpful!
- They were a bit easy compared to what we are actually expected to know and do.
- They were pretty confusing I thought.
- Tutorials were good, labs were badly timed. Why run lab sessions so soon after coursework release without giving us a chance to have any questions?
4. Natural Language Understanding Generation and Machine Translation

4.1) Please add any other comments you have about the presentation of course materials online and their accessibility.

- Easy enough to access material.
- Everything was very easy to access
- Good!

I liked the overall structure of the course but there have been some issues with the video quality of the recorded lectures. Some of these have been addressed (lecturers added pointers to the slides) but in the last few videos of the course it would be helpful for next terms to re-export them or re-record them if needed, as the image quality was glitchy and the sound would randomly disappear.

- good.
7. Natural Language Understanding Generation and Machine Translation

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

- Flipped classroom is more effective online than in real life, I feel more comfortable asking questions online than in a packed lecture theatre.
- Having a schedule, and lectures being published on a weekly basis
- Idk
- Just discussing maths is hard online, if you work it out on paper or on a board with someone I remember it much better. The extra sessions were done on a board with a marker and it all sank in much better.
- Nothing. It was all online.
- The tutorials were ok
- This course did not employ hybrid teaching, i.e. all activities were virtual.
- This course did not have hybrid teaching. Everything was online.
- nothing. keeping up with classes and assignments has been very tough.
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?

- Assigning a paired programming coursework to be done on DICE machines when we cannot meet in real life and cannot access DICE machines made the semester extremely stressful for no reason.
- Everything is explained above
- Live interactive classrooms work well- we clear our doubts and it is more to the pace.
- Maybe look at other instructors' material before writing assessment
- Not applicable
- Please be honest about it being completely online.
11. Thank you -

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

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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.

- I don't remember the lecturers individually.

- The assessment could have been better communicated. I definitely thought some tasks could have been instructed more clearly. For example, in CW1 it said that "the answer need not be longer than a paragraph" which is ambiguous (we thought we were supposed to write more than one paragraph but did not have to). Similarly, the midterm was filled with trick questions. I won't go into details but that really tricked me up. Great course otherwise!