EdStem

About

- Edstem.org is a discussion board platform some Schools in the College of Science and Engineering are piloting – including Informatics.
- Edstem is being seen as a potential replacement for Piazza with a much more up-to-date interface – and is feature-comparable with Piazza.
- EdStem has been Learn-LTI enabled for the School – there is an EdStem MS Team space set up for interested parties – contact the ILTS team for info.
- The following Informatics courses are participating in the EdStem pilot for 2024/25:
    - Advanced Robotics
    - Algorithmic Game Theory and its Applications
    - Computing in the Classroom
    - Natural Language Understanding, Generation, and Machine Translation
    - Programming for Biomedical Informatics.
- Please note that our EdStem instance is in the EU zone (DP / InfoSec reasons) – so course URLs will be https://edstem.org/eu/… – you may at times see a drop-down for region – select 'Europe'.

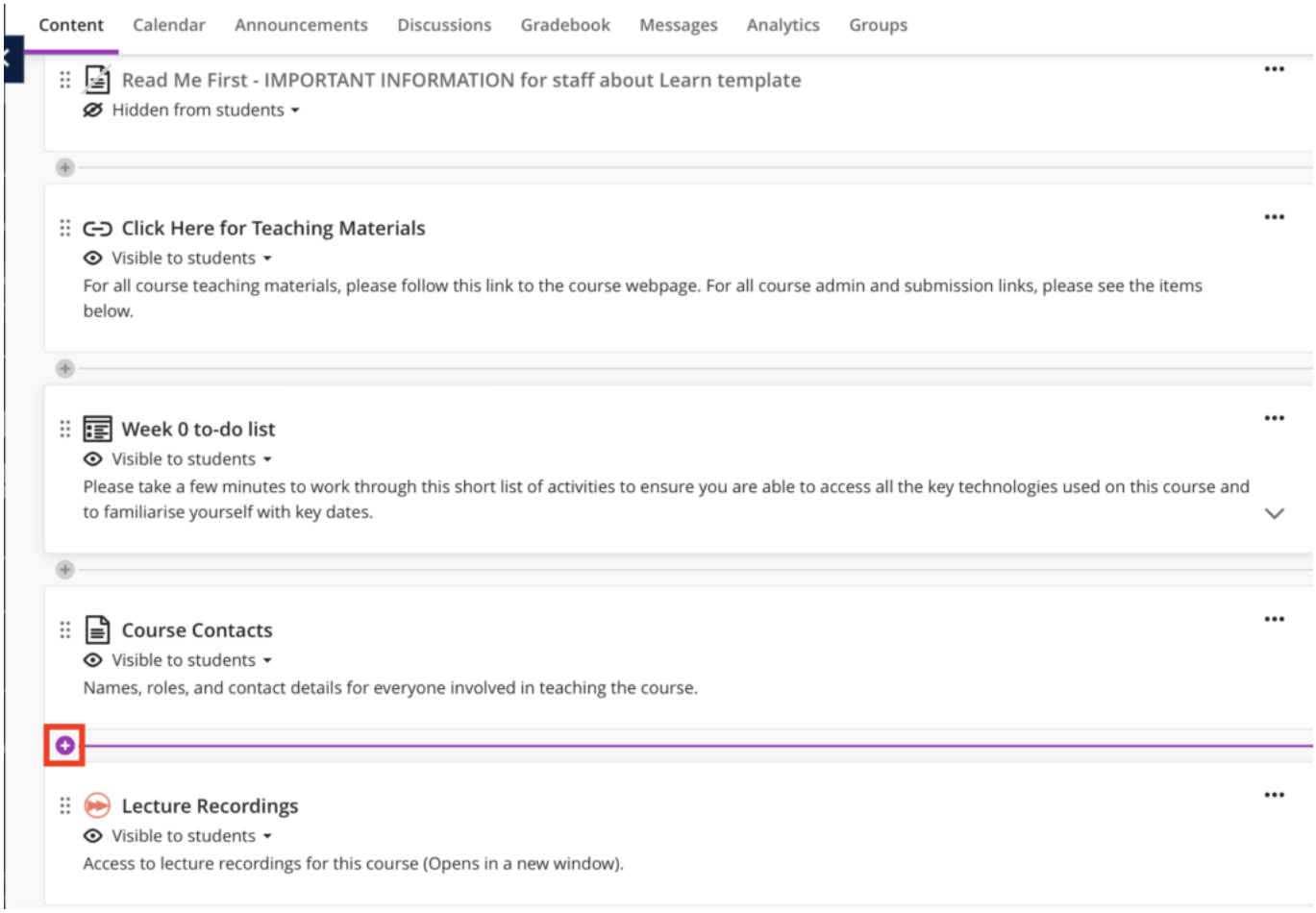
Setting Up

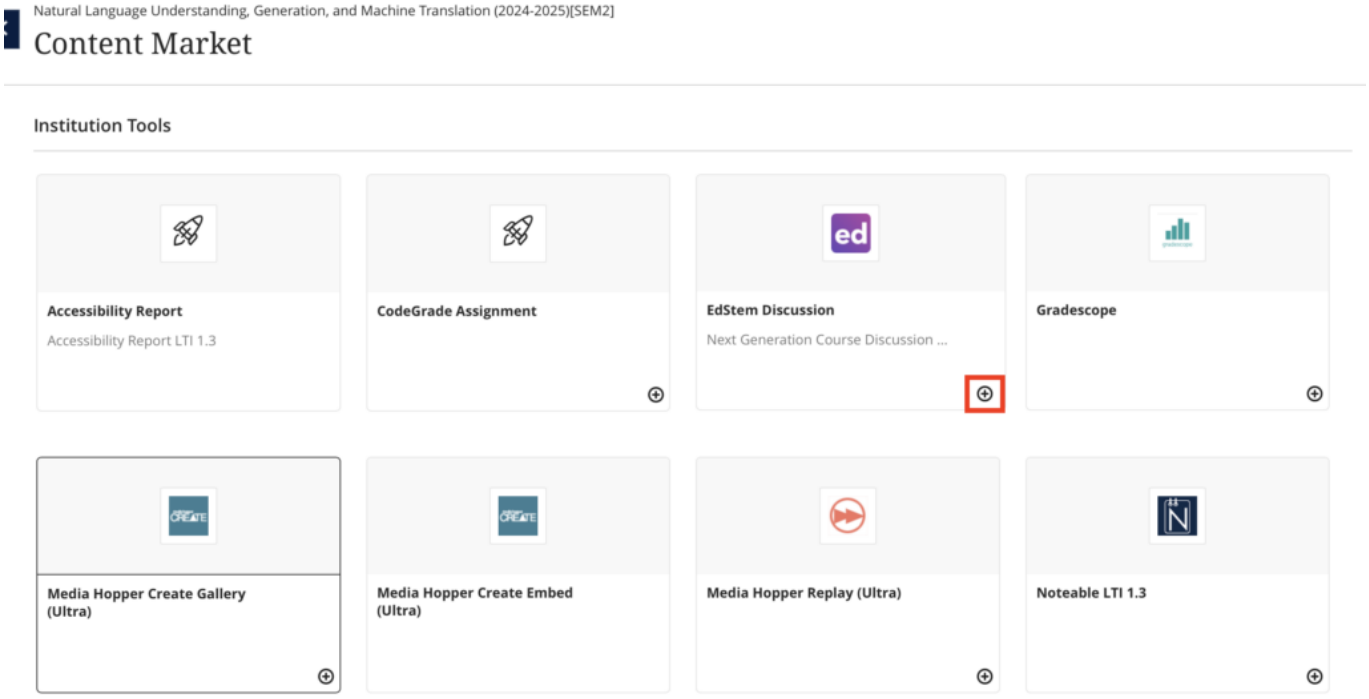
This is only for those courses above. No other courses in Informatics should be using this for 24/25 – continue to use Piazza.

Step 1

Go to + Content Market and hit + EdStem Discussion to add a permanent link to your course. Link is hidden from students by

default.


Content
Calendar
Announcements
Discussions
Gradebook
Messages
Analytics
Groups
Read Me First - IMPORTANT INFORMATION for staff about Learn template
Hidden from students
Click Here for Teaching Materials
Visible to students
For all course teaching materials, please follow this link to the course webpage. For all course admin and submission links, please see the items below.
Week 0 to-do list
Visible to students
Please take a few minutes to work through this short list of activities to ensure you are able to access all the key technologies used on this course and to familiarise yourself with key dates.
Course Contacts
Visible to students
Names, roles, and contact details for everyone involved in teaching the course.
Lecture Recordings
Visible to students
Access to lecture recordings for this course (Opens in a new window).


Natural Language Understanding, Generation, and Machine Translation (2024-2025)[SEM2]
Content Market
Institution Tools
Accessibility Report
Accessibility Report LTI 1.3
CodeGrade Assignment
EdStem Discussion
Next Generation Course Discussion ...
Gradescope
Media Hopper Create Gallery (Ultra)
Media Hopper Create Embed (Ultra)
Media Hopper Replay (Ultra)
Noteable LTI 1.3

Step 2

Click on the + link. This will open up a modal above the content (not in a new tab) and after a sec will CREATE the EdStem discussion for this course – using Course Name and Id

- This will do an initial sync of Learn users to the EdStem roster
- Email addresses are of the form of <uun>@ed.ac.uk for both staff and students.
- Staff or students will not have a password to begin with – you can add this via your profile icon (top right). Also add 2FA
- At start of Semester 1 there is no SSO with EASE – students should be encouraged to come in via Learn – but also see *Setting up a Password (optional)* below.

Step3

- Continue Setup then SKIP the Announcement. We recommend skipping the Announcement – as that will post an email to all participants (there's no way to post without emailing – you do get a warning Post/cancel about this).
- You probably don't want to email students at the point of creation – you can add a Welcome announcement later.

Step 4: Using EdStem

- You now have an empty course – you will need to make it visible to students in Learn when ready.
- It is recommend you read https://edstem.org/help/ now – it is important that you and your TAs seed discussion. We recommend doing a show-and-tell with your TAs. You can be added to some test courses to try things out – contact the ILTS team if this is of interest.
- If you want to add a welcome – you can add the Welcome Announcement you skipped over
- The welcome recommends the Quick Start Guide which is good

- Also point your students to the Students tab of https://edstem.org/help/ – which has Using Ed Discussion, Latex – and push notifications.

Setting up a password (optional)

There are advantages in setting up a password – it allows you to login by clicking on edstem links in emails, for example. Choose a good, secure password.

How to quickly and easily reduce the file size of your lecture slides

The Informatics Open Courseware service currently (as of January 2024) has a file upload size limit of 6MB. This is to ensure the performance of the site is not compromised at it continues to grow. If you have some files which currently exceed this size – and which could be reduced – then you may want to consider the following options.

Mac Users

PDF files

For Mac users, if you are looking to compress a small number of files, the Preview App is probably your best friend here. Open the PDF in Preview and choose File>Export. Select the Quartz Filter pop up menu and then select “Reduce File Size’.

Word documents

For Word documents, you can use Pages instead of Preview to

reduce your document's file size.

Linux Users

Linux users may be interested in https://imagemagick.org/ – free, open source software for editing and manipulating digital images. This is especially useful for tasks requiring bulk image file manipulation.

Collecting coursework submissions: Learn or Gradescope?

This blog post is intended to help course organisers decide which platform is most suitable for their needs with regards to coursework submission and marking. Learn Ultra – and its accompanying Gradebook – is quite a different beast to Learn Original, and so I thought it work highlighting the advantages and challenges of each approach. For simplicity sake, I have highlighted only those assignment types which are commonly used in the School of Informatics. If you have a requirement which sits outside of what is listed below (eg a graded blog) please get in touch with us and we can talk you through further options.

Learn Ultra

Learn Ultra supports the following ways of assessing students online:

- Learn Assignment
- Learn Test
- Turnitin

Gradescope

- Homework assignment
- Online assignment
- Programming assignment
- Group assignment
- Exam (more about the history of using Gradescope for exam marking can be found here)

Scenario 1 – student submits one individual PDF for marking

Learn Ultra

Learn Ultra can accept multiple files and file types. If one PDF is submitted, this should be displayed in the marking interface (although there have been multiple problems with how Learn handles PDFs in its own reader – particularly on a Mac – and so users are encouraged to download the PDF and open in their native application). A space is provided for the marker to enter grades and feedback. Delegated grading can be enabled for large courses where marking is distributed amongst a team of markers. In addition, parallel marking is now supported in Learn Ultra. This allows two markers to mark the same submission independently, with the course organiser acting as reconciler. Please note: parallel marking can only be enabled for individual submissions (ie *not* group assignments).

Gradescope

The Gradescope Homework assignment can only accept one PDF file upload. Marking can be distributed 'horizontally' – ie

different markers marking different sections of the submission. Like all the Gradescope assignment types, anonymous marking is supported intuitively – and can be enabled and disabled as needs dictate. A marking scheme can be created in advance, encouraging consistency. Rubrics can be created in advance, or 'on the fly'. One of the main advantages of Gradescope is the ability to change rubric values mid-way through marking, with marks previously assigned recalculated automatically.

Scenario 2 – group assignment

Learn Ultra

Learn Ultra can support a group assignment. The workflow remains: the groups needs to be created, a group assignment is submitted, one member of the group submits on behalf of the group. This is marked and the marks / feedback are cascaded to each member of the group. Please note: parallel marking can *not* be enabled for a group assignment – nor can delegated grading. So this is best suited for courses with only one marker. Also, anonymity can not be enabled for group assignments.

Gradescope

Gradescope can now support group assignments. As with Learn Ultra, the marker(s) mark as normal, but the grades / feedback are cascaded to each member of the group. However, with Gradescope group assignments, the responsibility for creating the group falls to the student submitting the coursework. Unlike with Learn Ultra, anonymity can be enabled however double blind marking is also not supported.

Scenario 3 – programming assignment

Learn Ultra

Learn Ultra can support a student uploading multiple files. These files can then be downloaded by the marker, with marking taking place offline. Marks and feedback can then be uploaded to the Gradebook via a CSV file upload.

Gradescope

Gradescope has a dedicated programming assignment type. Students can upload unlimited files, of any file type. Markers can build and use an autograder to automatically grade parts of the submission. Markers can also manually grade submissions. One of the main advantages of using Gradescope over Learn Ultra for programming assignments is you can perform a code similarity check within Gradescope.

* Please note: Gradescope Programming Assignments behave differently to Gradescope Homework assignments, in that the student can choose which submission they would like the marker to mark. Consider this when designing your assignment policy and communications.

Scenario 3 – multiple choice quiz

Learn Ultra

Learn Ultra has an inbuilt test functionality. Since the move from Learn Original, many of the question types are no longer supported. LaTex is, in theory, supported in Learn tests. However, in practice, this has proved problematic across the College and we currently do not recommend this approach.

Gradescope

Gradescope's online assignment type can be used for MCQ type tests / quizzes. It has several advantages over Learn Ultra test:

- a more intuitive interface for both question setter and student
- you can use LaTeX and Markdown to format the question text
- an in-built student preview (not available in Ultra tests).

Scenario 4 – marking by tutorial group

In the past, you may have appreciated the ability to mark by tutorial group in Turnitin. It is worth noting that Gradescope can now support this workflow. Please speak with a member of the ITO to help you set this up.

Summary

Gradescope provides a good user experience for all users and has become the default assessment platform for many courses across the School. We hope the above is useful, but please don't hesitate to get in touch with us if you'd like to discuss specific requirements for your course.

Copyrighted material in teaching

It is vital that any third-party content you use in your teaching materials is cleared for copyright. This includes readings that you might set your students, images in your slides, or videos you share with them.

For course materials published on Drupal, the Course Organiser must ensure that all material posted on their course pages is copyright compliant.

Take a few minutes to read through this fantastic (and brief) summary from the University's Open Educational Resources team about Copyright in Teaching and the three sub-pages detailing more about using book journals and texts, videos, broadcasts and sounds, and images. (If you need some background, check out What Is Copyright?) The University's Open Educational Resources team run workshops on these topics, which you may be interested in attending; you can find more information about them here.

Readings

You should use the Library's Resource List service for any essential / suggested readings. If you do not currently use this service, please familiarise yourself with it at your earliest convenience. It offers a lot of flexibility in terms of structure and layout to suit your course design. More information can be found on our blog post about Resource Lists.

Broadcast recordings and images

Some materials (often images or videos) are published under Creative Commons licenses, public domain, or other copyright cleared conditions and these may be available for you to use.

However, ensure you that you check all the policies for the relevant license before you use them. If you are new to looking for images or other media you can use, Creative Commons is a great place to start. They provide great explanations, instructions on how to attribute what you use, and a search engine, which searches across a whole range of other platforms.

Below are a couple places you might be able to source materials to use in your teaching:

- Are there any TV or radio programmes you want to share with your students? Check out Box of Broadcasts, which provides recordings you can share with your students (and unlike, say, BBC iPlayer videos, these won't get deleted after a set time period!). This is service that the UoE subscribes to and which all students and staff can access.
- The University's Image Databases list is a great place to find other useful resources, some of which you will have access to only through your UoE account and others, such as Pixabay, Unsplash, and Creative Commons, anyone in the world can access.

Course Readiness Update (2022)

With the start of teaching soon upon us, it is important to ensure your Learn course is ready for the start of term. This is the first place that students (and potential students) come to find out more about your course.

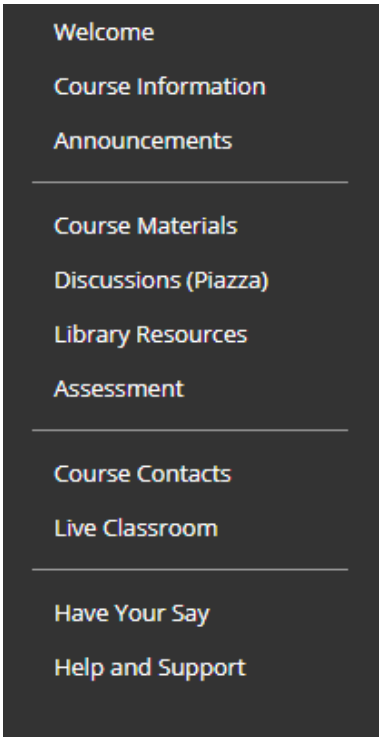
All courses are now available in Learn for the new academic

year. You can find a sortable list at https://course.inf.ed.ac.uk. If you cannot find your course please get in touch with the ITO to check that your enrolment is correct and that the course is present.

The Informatics Template

The use of a template is not new in the School of Informatics, and this year the design has been altered slightly in conjunction with the work that has been taking place in the Learn Foundations Project.

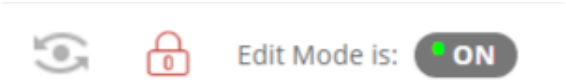
Your course has already been pre-populated with the following structure, and some core information about the course has been pre-populated.



School of Informatics Template – Menu

Please review all sections of the course, and read the instructions that are available inline within each content area. These instructions are not visible to students.

Try using the Student Preview button to get an accurate picture of what the student will see if they access the course.



Student Preview icon is on the left here, which some may say looks like an eye.

Week 0 and Week 1

You are expected to have your course ready for Week 0 (12th September 2022) and have outlined below the information that is expected to be available in your course.

Review your Template Content

We would expect all course organisers to have reviewed the content that has been pre-populated and complete or remove the sections that need additional content (these are usually highlighted in red).

We pull in course summary information from Theon. Please review this for accuracy and let the ITO know if there are any issues.

If you are not planning on using certain facilities such as Piazza Discussions, or the Reading Lists Tools, you can hide/delete these sections and components accordingly.

Announcements / Induction

The majority of the week 0 induction materials will be coordinated from the University, School, and Programme.

It can be a good idea to use the Announcements tool to welcome your new cohort to the course and help provide some structure

to what is expected of them each week. The announcements can be a helpful go-to for the students for the latest information about the course with pointers of where to find materials, etc.

The announcements remain visible through the duration of the course and can be emailed to the students. Be sure to select this option when creating the Announcement if you wish an email to be sent.

Course Materials for Week 1 (and more)

Please make sure that the content that is required for the initial week is ready and in place. The way that you structure your content in the initial teaching weeks will set the scene for how a student will interact with your course. You should think carefully about the "patterns" that you will be replicating across the weeks to help provide the appropriate structure and support to the students when accessing their course materials off-campus.

Make every effort to clearly state your expectations of the student, make it clear if there is a particular order of content to be accessed, state how long you might expect a student to spend on certain activities, and state which elements are core and which are for additional information only. By providing this additional signposting you will help your students plan their time across their courses.

More information on this is available in the related Course Patterns blog post.

Copying Existing Course Content

You may already have a large amount of course materials available in the previous instance of the course. It is possible for ILTS to perform a course copy into the new template, and provide some assistance in mapping this to the

new template and your course design patterns.

It is also possible to copy items or folders on a case by case basis from one course to another.

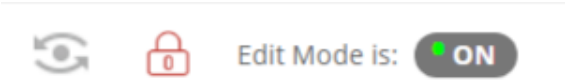
> **Tip:**
> We strongly recommend not just doing a bulk copy without reviewing which content you really want for this year. It often takes more time to remove the unwanted content and perform the housekeeping compared to just building the course up from the template for the new term.

Course Availability

The important last step before the start of term is to check if your course is available to students. By default all courses are created as "available to students". You have the flexibility to hide the whole course until you are happy for it to be released, alternatively you can set entire sections of the course as hidden, or just limit the availability of individual items.

Using Release Condition settings, additional complex access restrictions can also be applied to Learn content by date/time, group membership, grades, items marked as reviewed.

Please do make sure your course is available for the start of term. You can toggle the availability using the "Padlock" icon in the top-bar of your course when on the course landing page.



The padlock eye here is in the centre. It is highlighted red to show that the course is NOT

AVAILABLE to students

Flipped Classroom

If you would like to keep some of the affordances of pre-existing teaching materials (eg recorded lectures) and use them in a flipped classroom approach, the ILTS team is happy to offer advice via lt-support or consultancy meetings. Even if you don’t have a specific question we would love to hear your plans for the new term so we can share additional resources with you and help where we can.

Cutting Corners: An Informatics Case Study

Background

Pre pandemic, supporting STEM teaching and assessment at scale had become a strategic focus for the College of Science and Engineering at the University of Edinburgh. However, as the world went into lockdown in Spring 2020, the University was forced to move at a speed not usually seen in such large institutions. Thankfully, a successful pilot of Gradescope by the School of Informatics meant we were able to identify an immediate solution to moving our assessment online.

Before bringing a third party tool in to service, a number of checks and processes are required. A Data Protection Impact Assessment (DPIA) has to be carried out. This has to be run past Legal Services and Information Security. In addition, an accessibility assessment needs to be carried out. As The Smiths once wrote, these things take time. Thankfully, as due diligence had been completed prior to the pilot in Autumn 2019, we were in a position to adopt a new service, and new ways of working, very quickly.

As we already had a relationship with Turnitin (who had recently bought Gradescope), expanding the contract was relatively smooth. The College could look at this as an opportunity to include a wider group of academics and professional service colleagues – from whom to gather feedback. We already knew from feedback from markers – in particular moderators – that marking at scale in Blackboard Learn was extremely cumbersome – and, at times, unworkable.

A hiccup

And so, we seemed primed to roll out Gradescope across the School of Informatics, as well as a selection of other Schools within the College. However, there was a bump in the road. Changes to the Safe Harbour rules meant we had to revisit the DPIA and work with Legal again to ensure we could continue to use a third party service based in the US, without compromising the privacy of our students' data. All of this had to be completed by Schools, which were facing unprecedented workloads caused by the pandemic. Thankfully, we were able to negotiate a clause which satisfied Legal Services, and allowed us to continue to use Gradescope.

December 2020 Exams

We rolled out Gradescope as the default assessment platform for our exams in the December 2020 diet. The Homework Assignment assessment type was the preferred option, as we were keenly aware that many of our students were living under lockdown rules and may not have exclusive access to a device for the entire exam window. We wanted to ensure students could sit and submit their exams with the least amount of tech possible. They would need internet access at the start of the exam, to allow them to download their exam paper, and then again at the end of the exam, to allow them to upload their

answers. A smart phone would be the most likely device they would have access to that would allow them to do this and, using one, they could easily scan their answers and upload them to Gradescope.

Students were able to access their exam papers and submit their answers without issue. Markers could enter their marks in an intuitive interface. Marks could be accessed without issue by the teaching office. The only thing that was missing was a decent anonymity feature. We worked around this by changing the names within the Roster from <Jane Doe> to <Anonymous User 1>. But this was an additional administrative burden we did not want to keep supporting. We took advantage of our close working relationship with the Gradescope team and requested a proper anonymity feature. Within a few months, it had been rolled out and worked pretty much exactly as requested. Anonymity can be toggled on and off with ease – with a consistent anonymous ID applied to each submission. Blackboard and Turnitin – please take note!

2021 Exams

The next exam diet to support was Spring 2021. We also widened the assessment types available to our academic colleagues. After a successful pilot of the Online Assignment by two academic colleagues, this was now seen as a potential format for both our online exams and coursework. Markers were becoming more and more became familiar with the Gradescope marking interface, and students could have confidence that their submissions had been received.

During this period, Victoria Dishon, Head of IT for the College of Science and Engineering, had also recruited a project manager to evaluate the implementation of Gradescope across the College. The report can be found here (link accessible to UoE staff only). In short:

- 65% colleagues in Informatics reported spending less time marking each paper, with 11% reporting an increase. This was principally down to a couple of courses wishing to mark vertically.
- 65% colleagues in Informatics reported spending less time on the administrative aspects of marking too.

2022 Hybrid Exams preparation

With Gradescope now the default platform for online exams, we were keen to keep the affordances of marking horizontally online, but to trial this with a return to students sitting invigilated exams on campus. This was primarily driven by concerns around instances of academic misconduct in online exams, but with no appetite to introduce online proctoring. To this end, we applied to College to request two exams be sat this way in the Spring 2022 diet (Probabilistic Modelling and Reasoning & Operating Systems).

Once College approved this, we began to work with the course organisers and teaching office colleagues to identify potential issues with this approach. To avoid confusion in the exam hall itself, the exam question papers were printed separate to the answer booklets. Personalised answer booklets were printed with the student name and exam number on the front cover (the name was included to make it easier for exam invigilators), and the exam number in the header of each subsequent page. The name would be blacked out with a sharpie prior to scanning for upload to Gradescope. The answer booklets were bound with a staple in the top left corner. It is this corner which would be cut prior to scanning. Stickers for identifying information were discounted as there were concerns this would jam the scanner. The exam answer booklets needed to have sufficient space for students to write their answers and some spare pages, as the template in Gradescope could not cope with pages being uploaded that it didn't

recognise. The reverse of each page of the answer booklet had a large note saying “Do not write on this page; Anything written on this page will **not** be scanned for marking” to ensure that students did not write any part of their answers on the back. This meant that the answer booklets could be scanned single-sided, which would help cut down on jams. Colleagues scrunched up, folded, and spilt water on sample answer booklets – anything we could think might happen in the exam hall – to help us prepare for any issues with the scanning process.

Gradescope was set up as a Homework / Problem Set type assignment with the option for the Instructor, rather than the Student, to upload the submissions. Then the answer booklet template was uploaded and used to create the assignment outline, using the exam number space at the top of the first page for their answers as the “ID Region”. A student roster was manually uploaded to Gradescope with the exam number as the Student ID. This meant that Gradescope should automatically be able to match the exam number indicated in the assignment outline to the correct student once the answers were uploaded.

Hybrid exams – what happened?

The student experience of sitting the hybrid exams has been straightforward. Sufficient blank pages were left in the answer booklets which meant that no additional pages were required. The Course Organisers were positive about the experience, as it meant they could continue to use Gradescope for marking, but also the way Gradescope was set up – with a template to auto-match the student submissions to each question on the exam – meant that there were no problems with mis-tagged questions, as there had been when students uploaded the exam themself.

The Teaching Office came up with a clear process for preparing

the answer booklets (crossing out the name, cutting off the staple, etc.) and scanning them before uploading them to Gradescope. The large, general use Xerox printer / scanners were used for scanning; these send the scanned document through as a PDF via email.

There were mechanical problems, which meant that the scanning process ended up taking a lot more Teaching Office staff time than anticipated. The machines jammed which made the scanning process slow. Also, the lack of proper paper cutting implements meant that it was very difficult to cut through large page count booklets and left staff with blisters. Ideally, dozens of answer booklets could be scanned together into one document and then uploaded to Gradescope. Using the student exam numbers and the assignment outline, Gradescope would then be able to split all answer booklets contained into the file into individual submissions. However, due to jamming issues, only two answer books were able to be scanned together. This meant more time spent waiting over the scanner and more time selecting and uploading files to Gradescope.

What did we do?

These were not the biggest courses in the School and were only two of the 32 exams run in the School during the Spring 2022 diet. While the process for hybrid exams is now in place and does not need to be drastically changed for future diets, the Teaching Office staff time required to get the answers ready for marking was unsustainable.

Considering both the student experience, and the markers' experience remained positive, and the frustrations experienced by the teaching office staff were mechanical related, we took the decision to invest in a dedicated scanner. Able to scan c150 pages / minute, we bought a Kodak i4000 series machine in time for the December diet.

As of the time of writing (August 2023) we have now run two full successful exam diets using the approach outlined above. Not only is this the experience of the School of Informatics, but many Schools across the College of Science and Engineering have reported similar results. Auto matching a script to a user has also dramatically increased in accuracy, after Gradescope responded to our feature request to hide the student name field to markers. This meant we could include two unique identifiers per script, with only one (non identifiable to the marker) being visible to the marker.

Digital Skills Festival Monday 30th May to 3rd June

The Digital Skills Festival is run annually and with over 60 events scheduled covers a broad range of topics across all core areas of activity in the University.
You'll find sessions on

- Digital Communication, Collaboration and Participation
- Digital Proficiency and Productivity
- Digital Creation, Problem Solving and Innovation
- Digital Learning, Development and Teaching
- Information, Data and Media Literacy
- Digital Identity and Wellbeing

Please circulate the information about the festival to colleagues and staff.
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The Digital Skills and Training team in Information Services are pleased to announce that the Digital Skills Festival is returning for its second year. The Festival is running between Monday 30th May and Friday 3rd June 2022, and it is free to attend to all University of Edinburgh students and staff.

Last year’s Festival was a great success with 54 events running throughout the week, attracting over 1000 attendees. The Festival won the Staff Development Forum Developing Excellent Practice Award for its collaborative approach, relevance and inclusivity.
This year, the Digital Skills Festival is larger and running in a hybrid format. Over 60 events are taking place throughout the week, some online and some in-person in our training rooms in Argyle House and the Main Library. Presenters from within and outside of the University will cover topics ranging from social media engagement to learning technology. The programme is sure to include something for everyone.
Take a look at the Digital Skills Festival website to browse the programme and book your place.

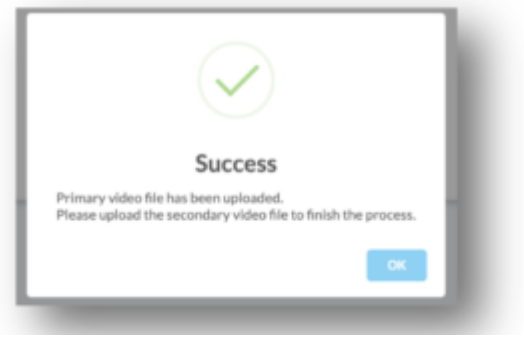
How to upload a video with dual feeds to Media Hopper Create

If you need to upload a video with two feeds (e.g. lecture slides and lecturer cam) to Media Hopper Create, this is possible through https://videomigrator.is.ed.ac.uk. When a video has dual feeds on Media Hopper Create, the user has full control over the size and location of both feeds while they watch the video. This is very useful for dynamic lecture videos when the focus changes between the two feeds and ensures the user can move the secondary feed out of the way of the main feed when needed. To upload a dual feed video:

1. Log in to the media migrator and choose the primary video file (the video feed that will be larger by

default).

2. Create a title for this file (this title will be the one that appears for both feeds) and upload the primary video file.
3. After the primary video file has completed upload you will receive a success message.



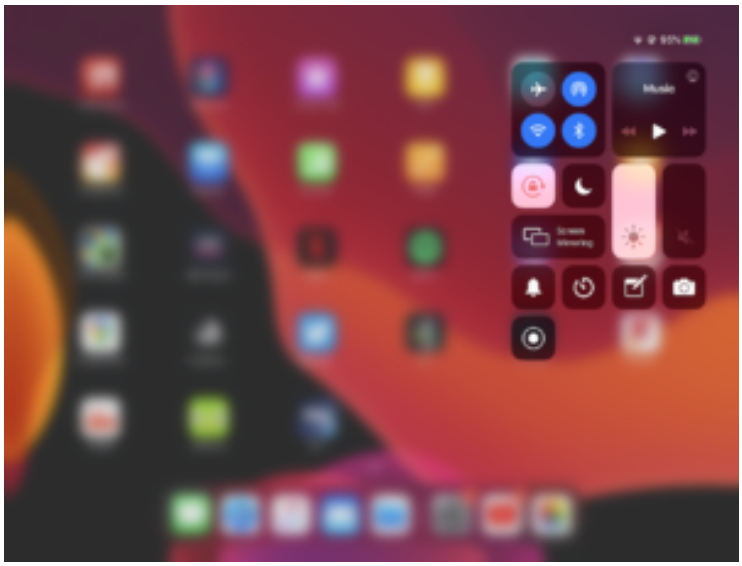
4. You can now repeat this process to upload the second feed (the smaller feed that will hover on top).
5. The second feed also requires a title but this will not appear on the final video page.
6. The video with dual feeds will appear on your 'My Media' section on Media Hopper Create where you can then edit the video details and publish it.

How to record and view your iPad screen on desktop using Reflector – Guide, Advantages, Disadvantages and Alternative

This guide was written using macOS and an iPad. The Reflector software is available on Windows. Reflector can support any device using AirPlay, Google Cast or Miracast.

How to use record your iPad screen wirelessly on desktop using reflector:
1. Download and install the app here.
2. Click the Reflector app in the menu bar to see devices connected.

3. On the iPad, swiped down from the top right of the screen to access the control centre. Tap Screen Mirroring and select the desktop device you want to reflect to.



4. On the iPad image on the desktop, click the cog on the top left to choose a frame for the image and adjust the scale, device rotation and choose whether the mobile screen image floats on top.
5. Click the menu bar icon for Reflector, click the camera or microphone icon to choose to enable webcam and audio recording. Click Record all to begin the recording.
6. Click the red record button again on the iPad stream image to end the recording. Once the recording is finished you can give the recording a name and choose where to save it.

Advantages:

-Reflector supports iOS devices using Airplay and Android devices using Google Cast.
-Reflector allows you to reflect multiple devices to your desktop at once, allowing a simultaneous recording of both.
-Ability to reflect devices wirelessly by using the same network is convenient and simple to set up.
-Allows you to record screen of mobile device and webcam of desktop simultaneously.
-Allows you to record screen of mobile device while hiding it on the desktop screen.
-Places mobile device video feed on desktop screen. This means you can use other software to do a screen recording that will capture the desktop and mobile device simultaneously in one video file.
-Allows you to use frames for the device's feed e.g. you can make an iPad video stream look like an actual iPad device.
-Changeable video quality settings, as well as different frame rate recording options to help decrease video file size.
-Reflector teacher allows use with reflector director, reflector student and is preconfigured for classrooms.

Disadvantages:
-Due to the connection to the mobile device being wireless, there is potential for lag in the recording if the network is weak.
-The trial version of the app has a significant watermark on recordings.
-Can't screen record desktop and mobile device at same time on its own.
-Difficult to change the scale of the image on the screen.
-If mobile device recording is separate from other components of lecture recording, the 2 videos would need to be synced up after recording.

Alternative – How to record the iPad using QuickTime Player (wired connection):

1. Plug your iPad into your Mac and launch QuickTime

Player, built into macOS.
2. On the app menu bar, click File>New Movie Recording.
3. On the video control panel, click the downward arrow beside the record button and select your iPad as the video and audio source.
4. Click the record button. When you are done recording click the stop button.

Improving student experiences in Learn: usability testing showcase and workshop

On 1 March, the IS User Experience (UX) Service, in partnership with the School of Informatics, ran a Learn usability testing showcase event. Participants from across the University watched screencasts of students using an Informatics Learn course, before prioritising the usability issues identified.

Five students in total took part in the testing – four from Informatics, including those enrolled on single programmes, joint programmes with other Schools, and those from our Undergraduate Apprenticeship Scheme – and one from the School of Economics. Each was presented with the following scenario and four 'typical' tasks to perform.

A copy of the Learn course for Computer Security was used for testing purposes. This was chosen as it aligned closely with the Learn template developed for the School.

Scenario

You're a third year student on the joint programme BSc

Artificial Intelligence and Computer Science. This semester you are studying a course called Computer Security. It’s week 3 of the course, and you’re preparing for your first piece of coursework.

Tasks

Task 1: You want to check the deadline for the first piece of coursework and see if it clashes with any other coursework deadlines. Using the Learn course site, find out the deadline for the first piece of coursework, and then see if it clashes with coursework deadlines for any other courses on which you are enrolled.

Task 2: You missed the third lecture of week 1 because of sickness. You’d like to watch the recording so you can catch-up. Using the Learn course site, find and play the third lecture of week 1.

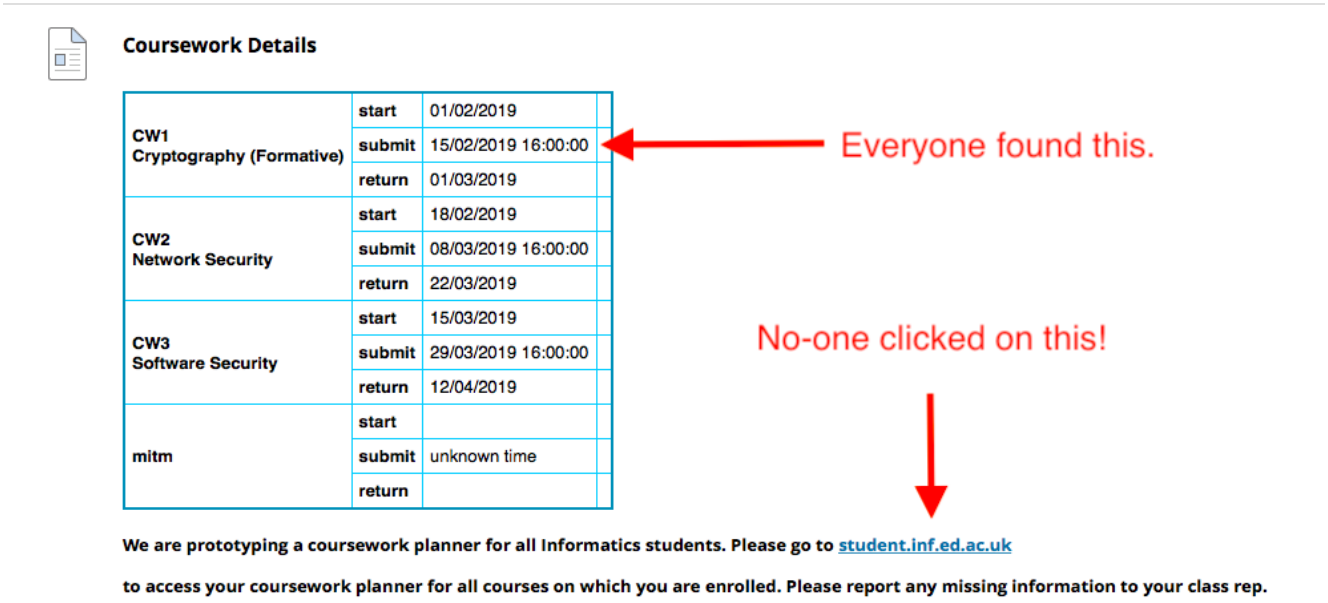
Task 3: You’re going away for the weekend and you’d like to do some reading while you’re away. You’re not sure you’ll have access to the internet, so you’d like offline access to your reading. Using the Learn course site, find the required textbook for the course and see if you can download or print a section of the textbook.

Task 4: You’d like to familiarise yourself with the content of the last lecture you attended, called Cryptography – asymmetric encryption. Can you open the lecture notes from this lecture?

Results

Task 1: Most users found the coursework deadline relatively quickly and with ease. One student checked both the *Course Information* and *Course Content* pages prior to selecting the *Coursework and feedback* page.

However, no users were able to easily find the link to the personalised coursework planner. This was expected, and one of the reasons why I included it in the task.



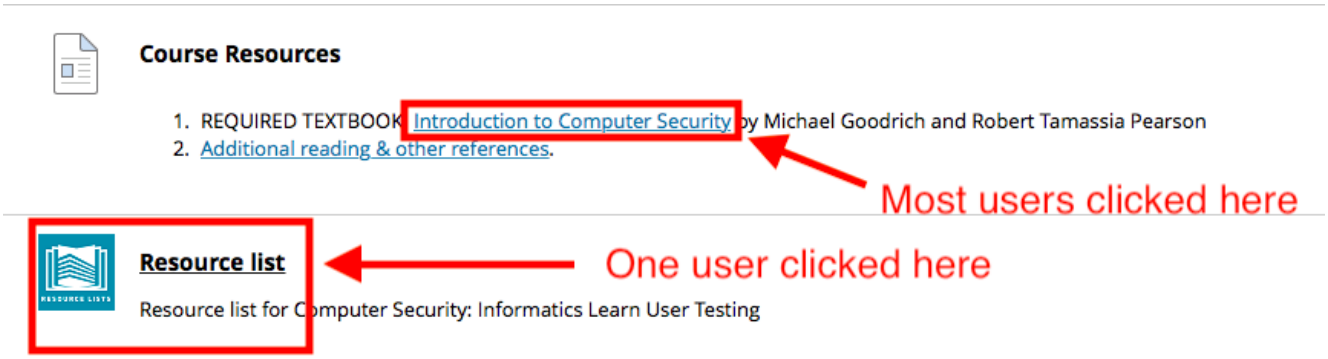
Task 2: Most users found the link to the lecture recording overview page with relative ease. Some users were expecting to find a direct link in the table on the *Course content* page. This was not surprising as the Semester 1 course Informatics 1: Introduction to Computation includes this.

There was, however, a significant usability issue identified for all users when it came to identifying a particular recording from the Media Hopper Replay course overview page. This was caused by the unhelpful automatic naming convention of recordings (see below). Users performed a lot of cross-checking between different pages on Learn, various online calendars and and the Media Hopper Replay course overview page to identify the recording from the “third lecture of week 1”.

Task 3: The course organiser had used Leganto, the centrally supported Resource List tool, for the course. Users could access the text on Leganto via both an in-text link, or an icon associated with the service link. Most Informatics users found the link to the required textbook with relative ease. There was one instance of users navigating to the table on the *Course content* page where references to specific chapters are included.

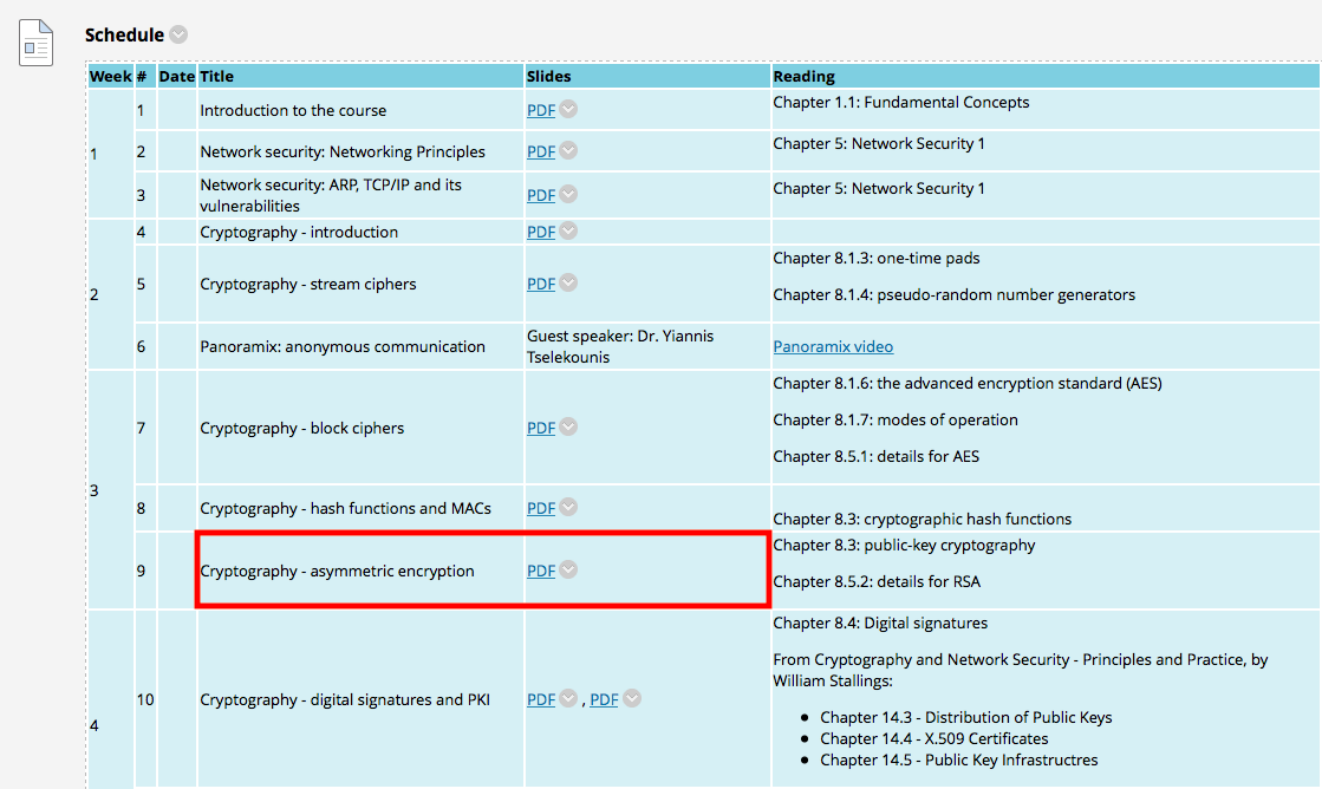
This particular textbook was behind an EASE login. As the students were using a dummy account, they were prompted to enter their EASE credentials which would not be the case when logged in as themselves.

Interestingly, the student from Economics searched for the textbook by navigating to the Handbook. This highlights the different approach to content curation and the various roles course and programme handbooks perform across the University.



Task 4: Four users found the link to the lecture notes with

ease. One (visiting) student initially checked the *Coursework and feedback* page. It was noted that the terms *lecture notes* and *lecture slides* are sometimes used interchangeably.



Schedule

Week	#	Date	Title	Slides	Reading
1	1		Introduction to the course	PDF	Chapter 1.1: Fundamental Concepts
	2		Network security: Networking Principles	PDF	Chapter 5: Network Security 1
	3		Network security: ARP, TCP/IP and its vulnerabilities	PDF	Chapter 5: Network Security 1
2	4		Cryptography - introduction	PDF	
	5		Cryptography - stream ciphers	PDF	Chapter 8.1.3: one-time pads Chapter 8.1.4: pseudo-random number generators
	6		Panoramix: anonymous communication	Guest speaker: Dr. Yiannis Tselekounis	Panoramix video
3	7		Cryptography - block ciphers	PDF	Chapter 8.1.6: the advanced encryption standard (AES) Chapter 8.1.7: modes of operation Chapter 8.5.1: details for AES
	8		Cryptography - hash functions and MACs	PDF	Chapter 8.3: cryptographic hash functions
	9		Cryptography - asymmetric encryption	PDF	Chapter 8.3: public-key cryptography Chapter 8.5.2: details for RSA
4	10		Cryptography - digital signatures and PKI	PDF, PDF	Chapter 8.4: Digital signatures From Cryptography and Network Security - Principles and Practice, by William Stallings: • Chapter 14.3 - Distribution of Public Keys • Chapter 14.4 - X.509 Certificates • Chapter 14.5 - Public Key Infrastructres

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Action Points

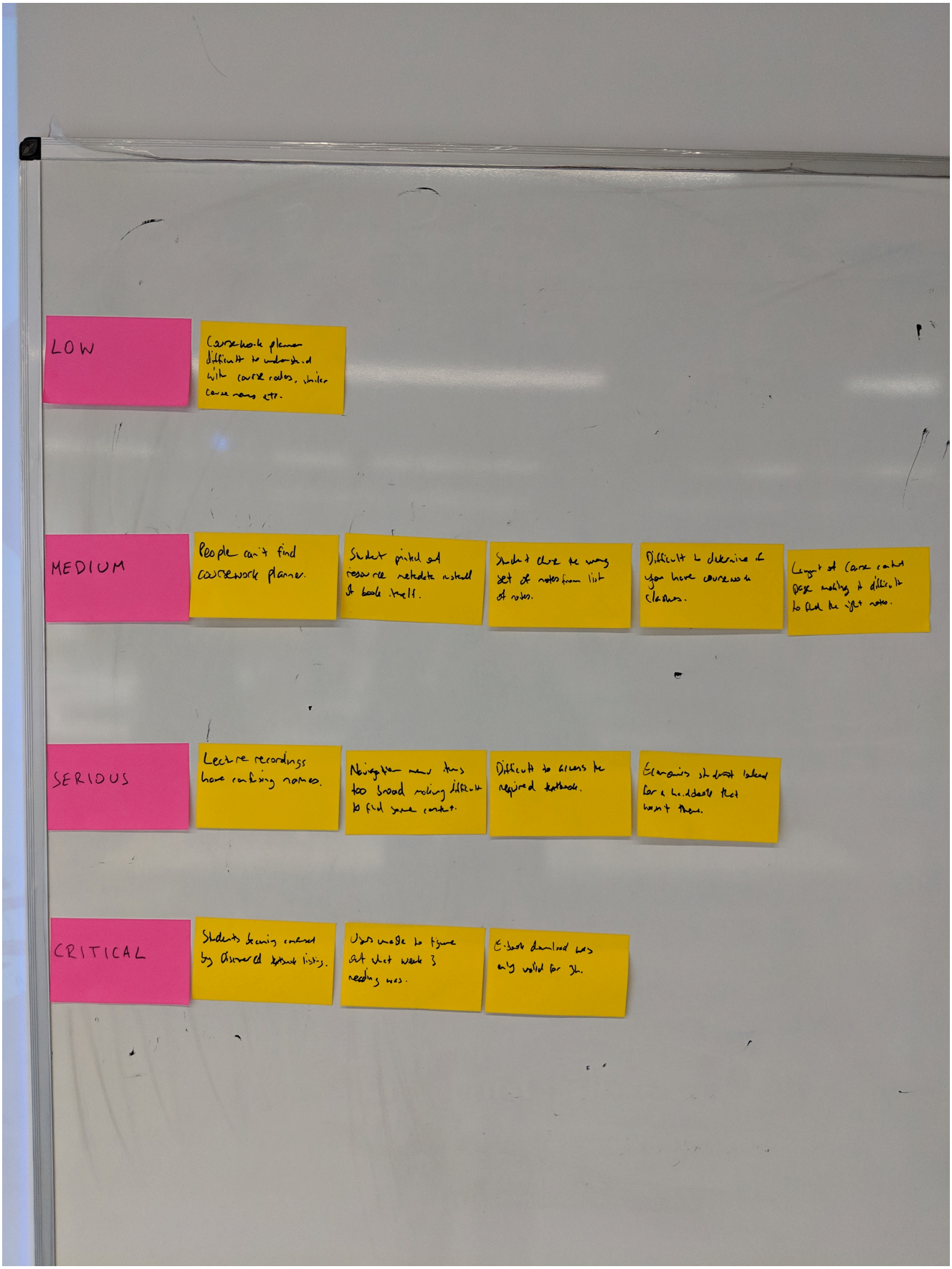
- Feature request for Media Hopper Replay team: can we automate naming of recordings by date? Venue information would also be helpful here.
- Request for Media Hopper Replay team: can we facilitate production of individual URLs for each recording which will work for enrolled users – *even when they haven't selected initial LTI link*. Only when this can be a achieved, should we encourage course instructors to include links to Media Hopper Replay recordings in the table on the Course Content page.
- Promote coursework planner across the school. Posters / monitor displays etc.
- Include a thumbnail of a 'typical' coursework planner in the next iteration of the template.

- Can the coursework planner display full course name rather than acronym?
- Enquire into possibility of responsive design for coursework planner.
- Can we have the coursework planner work for tutors (eg marking loads)? Do we need this?
- Work with the web and communication team to research how Informatics students use the yearly handbook.

Reflection

I thoroughly enjoyed working with Duncan Stephen on this mini project. The feedback was informative, encouraging, and a call to action. I'm looking forward to embedding similar practice across the School for alternative platforms for content delivery.

The results of the 'prioritisation of issues' aspect of the workshop can be found below. If you would like to know more about this particular round of testing, or would like to use *your* course for further testing, please don't hesitate to get in touch.



Further links

- User Experience Service: http://www.ed.ac.uk/is/ux
- Join the UX community: http://bit.ly/UX-meetup-blogs

- UX mailing list: http://bit.ly/uoe-ux-mail
- Steve Krug's Rocket Surgery resources: http://bit.ly/1I1muXo
- David Travis's prioritisation flowchart: http://bit.ly/1I1mCWW