Physics Lecture Replacement Plan for 20/21

17th July 2020

The following set of principles is intended to aid staff in planning for the replacement of in-person lectures next academic year. It has been shaped by ideas and discussions before, during and after the Annual Review of Teaching, and by external pressures. In particular it has included input from Ifan Hughes' working group; from the SSCC; from interactions with and advice from DCAD; from Faculty Education Committee, and subgroups thereof; from the IoP Teaching and Learning series of online events; and an ad-hoc working group led by the Director of Education that has finalized this document.

1. **In-person lectures, with a live student audience, will not take place.**
2. **We will not broadcast live lectures in the timetabled lecture slots.**
3. **Lecture content will remain broadly the same – we will teach the same material. The delivery will change, such that it will consist of pre-recorded material, combined with interactive material (e.g. online quizzes) where appropriate.**
4. **The recordings of lecture material are generally expected to happen at home while home working remains the dominant mode of work.**
    a. Some rooms may be available on campus to record lectures but will likely have to be booked and are not available at yet.
    b. We will also look to set up one or more rooms in the department to use for the recording of material.
5. **Interaction with students about the lecture content will happen weekly in an online office hour, scheduled in one of the timetabled lecture slots.**
6. **Further support will be provided via the tutorials at Level 1, and workshops at Levels 2 – 4, at least some of which we aim to run in-person.**
7. **We advise against lectures being in the form of single, uninterrupted hour-long recordings. Breaking lectures up into 2 – 4 "chunks" of ~ 10 – 15 minutes, or shorter, is recommended.**
    a. This is predominantly driven by staff utility – shorter recordings are quicker to edit and upload, and it takes much less time to re-shoot a shorter video.
8. **You do not need to fill the whole 50 minutes of the usual lecture slot with material.**
    a. Experience informs us that talking to a camera is generally faster than talking to an audience (for a combination of reasons, but largely the lack of human interaction). **Aim to cover the important material, not to fill the time.**
    b. Do not exceed 50 minutes material per lecture. The lack of a hard constraint on time available for the lecture is not an opportunity to provide more material to students.
9. **We recommend that staff combine the use of at least two of three possible video streams in each lecture. These streams are:**
    a. Talking heads – video of the lecturer speaking to camera.
    b. Screen capture – powerpoint files and/or animations and/or other on-screen digital materials used to support the lecture.
    c. Written word – video of what would have been written on a whiteboard/visualizer.

10. **We will require that recorded lecture material uses closed captioning.**
11. **Scaffolding will be critical in supporting students through your material and should be provided on DUO.**
    a. We already have much of this in place – for example the requirement to publish a course summary in advance of term, that notes the topic of each lecture and how it links with textbooks, etc. Any additional context that clarifies how the different elements of the course relate will be helpful, particularly at Level 1.
    b. We recommend that at the start of each course you have some basic induction material that goes through the structure and logistics of the course, including how it maps onto supporting textbooks, and includes contact details and availability for yourself including for the office hour.
    c. Interactive material, for example embedded quizzes or Jupyter notebooks, will help with student engagement and learning, and so should be considered an important part of many replacement lectures.
12. **The recycling of Encore material from last year is permitted.**
    a. This should **not** be the posting of entire captured lectures. Instead, look to use clips of e.g. material worked through on the visualizer, interspersed with new recorded material.

Notes: reasons behind decisions and further information in red.

1. **In-person lectures, with a live student audience, will not take place.**
   The overwhelming majority of our lecture class sizes are too large to fit into any University lecture theatres while maintaining social distancing.
2. **We will not broadcast live lectures in the timetabled lecture slots.**
   Experience from revision lectures is that the live feedback you get from students in a lecture is all-but absent and technical hitches are highly likely, making live performance a poor student and staff experience.
3. **Lecture content will remain broadly the same – we will teach the same material. The delivery will change, such that it will consist of pre-recorded material, combined with interactive material (e.g. online quizzes) where appropriate.**
   The time and resource to produce large volumes of new subject content is not available in the current situation. Nothing more than minor tweaks to content should be made. What will of necessity change is the media through which we present the content. Further details are given in later points that recommend how the lecture replacement should be structured, and a separate document (Physics Lecture Replacement Technical Advice) provides advice on how to record and edit lecture material using Panopto/Encore. We leave it to individual lecturers as to how much interactive material they wish to include.
4. **The recordings of lecture material are generally expected to happen at home while home working remains the dominant mode of work.**
   The rooms that lectures were originally scheduled to be delivered in will not be available for recording lectures. While it is likely that rooms on campus will be set up for the recording of material – including the intention that we set up one or more rooms for internal use within Physics – the demand for such facilities is likely to be high. It would therefore be prudent for most staff to set themselves up to record

from home. Advice on hardware and software will be provided in a separate document.

   a. Some rooms may be available on campus to record lectures but will likely have to be booked and are not available at yet.
   b. We will also look to set up one or more rooms in the department to use for the recording of material.

5. **Interaction with students about the lecture content will happen weekly in an online office hour, scheduled in one of the timetabled lecture slots.**
   The University timetable will remain largely untouched in terms of **what** is scheduled **when**. What will change is the **where** – large lecture rooms will be re-allocated to host face-to-face teaching of smaller groups. Hence we can expect our students to be free in the slots timetabled for our lectures – and can use these slots for activities related to the lecture course.
6. **Further support will be provided via the tutorials at Level 1, and workshops at Levels 2 – 4, at least some of which we aim to run in-person.**
   Some face-to-face support on the lecture courses will be necessary – this will be provided by the tutorials and workshops. Further details are provided in the Physics Teaching Plan document.
7. **We advise against lectures being in the form of single, uninterrupted hour-long recordings. Breaking lectures up into 2 – 4 "chunks" of ~ 10 – 15 minutes, or shorter, is recommended.**
   a. This is predominantly driven by staff utility – shorter recordings are quicker to edit and upload, and it takes much less time to re-shoot a shorter video.

   Shorter "chunks" of lecture are both much easier for us to handle technically (editing, uploading, re-shooting etc.) and easier for the students to engage with. Longer recordings can take prohibitively long times to edit, process and upload.
8. **You do not need to fill the whole 50 minutes of the usual lecture slot with material.**
   a. Experience informs us that talking to a camera is generally faster than talking to an audience (for a combination of reasons, but largely the lack of human interaction). **Aim to cover the important material, not to fill the time.**
   b. Do not exceed 50 minutes material per lecture. The lack of a hard constraint on time available for the lecture is not an opportunity to provide more material to students.

   This is not an opportunity to add in the extra bits of explanation that you always ran out of time on in your normal lectures. Plan to cover the important points from your course, with sufficient supporting material that the students engage, but not so much that the recordings become long and too content heavy. You certainly do not have to fill all 50 minutes you would usually do in a lecture. In many cases we would expect a pre-recorded lecture could condense most material within 30 minutes, particularly if interactive material such as quizzes are also used as a part of the delivery. Students still need time to watch and absorb all the material you provide and the time they have hasn't changed.
9. **We recommend that staff combine the use of at least two of three possible video streams in each lecture. These streams are:**
   a. <u>Talking heads</u> – video of the lecturer speaking to camera.
   b. <u>Screen capture</u> – powerpoint files and/or animations and/or other on-screen digital materials used to support the lecture.

c. Written word – video of what would have been written on a whiteboard/visualizer.

Pre-recording of material means that we have to ensure it is of sufficiently high quality. In this case a single video stream encompassing the whole lecture is unlikely to be successful[1], even if broken into separate chunks. Some at least of each lecture should be done as a talking head, to humanize the delivery. This can be cut with you speaking over either digital material (e.g. powerpoint slides) or handwritten material. Further technical advice is in supporting documents.

10. **We will require that recorded lecture material uses closed captioning.**

This is a necessity to meet EDI expectations. Automated production of captions (essentially subtitles) is possible on many platforms, including Panopto/Encore, although in most cases they need some subsequent manual editing.

11. **Scaffolding will be critical in supporting students through your material and should be provided on DUO.**
    a. We already have much of this in place – for example the requirement to publish a course summary in advance of term, that notes the topic of each lecture and how it links with textbooks, etc. Any additional context that clarifies how the different elements of the course relate will be helpful, particularly at Level 1.
    b. We recommend that at the start of each course you have some basic induction material that goes through the structure and logistics of the course, including how it maps onto supporting textbooks, and includes contact details and availability for yourself including the office hour.
    c. Interactive material, for example embedded quizzes or Jupyter notebooks, will help with student engagement and learning, and so should be considered an important part of many lectures.

Use DUO to highlight the structure of the material in your course. As well as the standard lecture-by-lecture breakdown, students will need to be guided through individual lectures (order of viewing of chunks, where/when to look at supporting material), and to see how the supporting activities fit in with the lectures. Keeping your DUO folders for your course well organized and well signposted will be critical in helping students if their learning is predominantly online. Alternatively, DUO has a function named 'Learning Modules' that allows you to dictate the order material is accessed, which can be used to scaffold.

12. **The re-cycling of Encore material from last year is permitted.**
    a. This should **not** be the posting of entire captured lectures. Instead, look to use clips of e.g. material worked through on the visualizer, interspersed with new recorded material.

We have a large pre-recorded resource ready to go. Last year's recordings were not specifically designed to be the main means of delivery for any of our courses – they were a means of support for students in addition to in-person delivery. But, some parts of those recordings could be useful for this year's delivery if cut out and packaged correctly. Advice on doing so will be given in a supporting document.

---

[1] Long single video streams – for example a disembodied voice speaking over video of a hand, writing illegibly on poorly-lit paper – run the risk of appearing to lack professionalism. Please note the real concern expressed within the University that low-quality recordings could appear on public platforms (e.g. YouTube) that would be difficult to remove and would reflect poorly on us all.