The EDTL Approach for Lab based Modules

The EDTL Approach has been developed to support all staff who support learning for effective remote teaching in the context of COVID-19 and outlines a pathway with key considerations for those who are adapting a **lab based** module that is normally taught, wholly or partly, face-to-face.

Reflect on the **Emergency Pivot:**

- What worked well?
- What didn't?
- What was the student feedback?
- Talk with other colleagues and your school about successful cases and practices that might suit your module.

Consider your **Students:**

- What can the students do safely on their own, what do they need to do in a lab?*
- What supplies are available to them in the home?*
- What technical issues might they encounter, broadband, equipment etc. - Go with simple, robust technology that students are familiar with, if possible.
- The online lab environment may make collaboration between students more difficult.

Optimise **Time spent in the Lab:**

- Optimise the time spent in the physical lab by moving pre and post-lab work online. This will enable them to be prepared in the concepts that will be explored during the lab, and familiar with the equipment and techniques that they will be using.
- Provide clear instructions of the work to be carried out.
- Consider using image databases when possible to reduce the need for microscopes. If a database is not available, consider taking the pictures/videos yourself.
- Any calculations, preparations and analysis should be done outside the lab.

Safety First!

- Create safety videos to demonstrate the proper use of tools and techniques that would be needed.
- Create a Quiz with questions focused on best practices and safety before students attend any lab session.

Consider the **Curriculum:**

- Review the learning objectives to assess what is achievable:
  - You could create a video of a technique and annotate the key steps or online simulations and/or virtual labs as alternatives.
  - Data collection and analysis-consider providing your students with raw data for analysis, supplemented with a screen recording to demonstrate the data collection process.
- Become familiar with your class sizes, equipment, software, and resource needs.
- Consider creating content that would give students all the knowledge they would get from a live demonstration.
- Create digital content that can be reused in the future.

Consider **Communication & the Technology Mix:**

- Make your lab instructions as simple and clear as possible.
- Establish any safety precautions and communicate them.
- Include any instructions relating to lab policies within the VLE.
- Think about your expectations with respect to data acquisition and reporting.
- Provide students with a comprehensive list of materials and tools they will need to perform any experiments.*
- Consider creating a discussion forum for each lab session to promote communication and sharing of ideas.

Consider **Assessment & Feedback:**

- Communicate clearly to students what is expected from them.
- Ask students to include a picture of their experiments in lab reports which includes name and date of experiment.*
- Consider creative ways to assess if students understand the methods:
  - Give your students a video of an experiment that did not work and ask them to identify the cause of the error.
  - List the steps required to create an experiment and ask students to put them in the correct order.
- Create precise rubrics according to the learning outcomes of the lab.

* Where it is possible and safe for students to carry out practical work at home.

The Enhancing Digital Teaching and Learning (EDTL) project is funded under:

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