

Continuity Strategies for Science Teaching Labs

Traditional science teaching labs tend to be heavily rooted in their physical spaces. Lab equipment, lab materials, lab activities, and student presence in the labs are all critical to the proper functioning of traditional science teaching labs. So how can these science labs possibly transition from a physical space to online for a short period of time? Well, by following some simple strategies, most science lab curricula could be operationalized online for a short period of time.

The following five strategies are minimum recommendations for instructors teaching science labs that must continue albeit online for a short period of time.

Strategy #1

Be proactive now and capture images or videos of the physical lab space, and relevant equipment and materials. This media will be useful when you're trying to explain the online resources to students in the context of the on-campus labs. For example, if students were set to use a spectrophotometer in the real labs, it helps to show a photo of the actual spec rather than some random image found online. To get a sense of what this might look like, view [How to Use Video to Prep Students for Science Labs](#).

Strategy #2

Create [Canvas pages](#) for each day your students would be expected to participate in the on-campus labs. Structure these pages in similar fashion so that students can become quickly familiar with the format. Create a [Canvas module](#) and order the pages accordingly.

Each Canvas page should include at minimum the following headers:

- Lab Date
- Topics and Key Concepts
- Agenda (list new online instructional materials)
- Assignments

Strategy #3

Outline a communication plan and post it inside of the Canvas course, don't just email it. As the instructor you have three important communication goals: (1) to communicate frequently with your students, (2) to let students know how they can communicate with you, and (3) setup additional asynchronous communication channels inside of Canvas.

The following articles written by CIRT's instructional designers might be helpful:

- [Tips for Online Course Delivery](#)
- [Engaging Students in Canvas](#)
- [Communication in Canvas](#)
- More [best practices articles](#) written by CIRT's instructional design team

Strategy #4

Once you've organized when and what students will need to learn (strategy #2) and how they will know this (strategy #3), the next step is to acquire content and facilitate the labs online. Of course, in a short period of time there's only so much that can be done. You are not looking to replace the lab, though you might be surprised to find some really good online resources. At minimum, you are just looking for adequate resources to assist students in learning key concepts until you are able to resume on-campus labs. The internet is filled with such resources, here are few websites that will lead you to others:

- [Course Continuity for Lab Courses](#)
- [The Sourcebook for Teaching Science](#)
- [Khan Academy](#) - for specific lecture-driven topics
- [OpenStax](#) - for access to content licensed under a [Creative Commons Attribution 4.0 International License](#)
- [Online Resources for Migration](#) - Google Sheets

Strategy #5

Finally, to keep this all going smoothly for whatever period of time is necessary, the instructor should be overly present in the minds of their students. Perhaps even more so than would normally occur in fully online courses. The reason is that these circumstances are not normal and so instructors should expect their students will not behave normal. In a fully online course, instructional design scaffolding plays a major role in easing the students mind about course requirements. However, in these circumstances, there's not enough time for proper course scaffolding and so the instructor must fill the "gaps" with above and beyond instructor presence. Read [Cultivating a Sense of Presence in Your Online Course](#) for some ideas on how "instructors can help to combat this sense of separation and isolation" their students might be experiencing during these uncertain times.