Covid presented a unique situation, we had a class of students with no hands-on lab skills but a repertoire of virtual experiences instead.

The degree plan does not allow for repeating a course already deemed as complete. This short course enabled the students to obtain the needed hands-on skills without having to repeat credits.

We offered the 2-day workshop on consecutive Saturdays.

Many of our students faced an undergraduate lab experience online (virtual). This workshop was a 2 day experience designed to teach hands-on lab skills including:

**Analysis and Measurement**
- working with glassware and balances
- working with real chemical samples
- solution handling skills: making solutions, dilutions, and pipetting
- making calibration curves
- titrations

**Synthesis, Characterization, and Preparation**
- sample and reagent preparation (solution prep, dilutions, purification, extractions, digestions, buffer preparations, etc)
- purification- solvent selection, recrystallization, chromatographic approaches
- sample preparation for measurement on instrumentation
- glassware/ reaction ware selection
- safe handling of chemicals and appropriate disposal of waste