

Skilled Trades COVID-19 Career Education Guidelines

School Time is Lab Time

By its very nature, skilled trades Career Technical Education (CTE) is complex. Now, with COVID-19 impacting everything we do, it has become more difficult than ever. That's why Electude, CCAR and NCCER have partnered to create a set of guidelines to deliver skilled trades education in a way that is safe and effective for both instructors and students.

It begins with a shared reality: In this new era, regardless of whether you have in-person contact with students part-time or full-time, labs must be the priority. Physical proximity is simply not necessary for lectures and theory. A blended learning environment that combines online instruction with in-person training is the best way forward.

But just saying, "hold classes online" doesn't provide much guidance. Maintaining social distancing while gathered around a project in the lab is anything but easy. Working within a modified schedule that limits class size is complicated. Cleaning every surface several times a day is a chore. Meanwhile, directives from your administrative staff may complicate things even further.



The following guidelines should help you create workable solutions for your specific situation. Contents include:

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While it's a vastly different world than this time last year, we believe with proper precaution and blended learning this situation is at least reasonably manageable even if there are still unknowns.

Managing a Blended Learning Experience

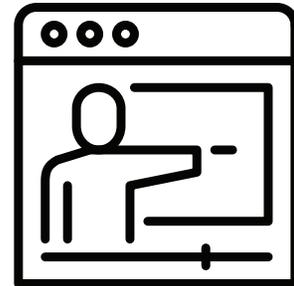
The introduction of a blended learning experience that combines online learning with hands-on training poses very real challenges for CTE educators in terms of time management, student engagement, technical know-how, and educational quality.

Online tools are clearly the most practical method to deliver content from a distance. We support the use of a far greater percentage of online work so that we can reserve hands-on work for time- and space-challenged tasks.

Tips for Success

To blend instruction successfully, we recommend:

- Following at least some of your regular calendar at set times (synchronous learning). This will help provide structure to an evolving situation
- Consider pre-recorded lectures or online lessons (asynchronous learning) to provide students with a more flexible way to learn. This may also make it easier for you to focus on other activities, such as course management and could be the source of continued learning in the event of a technology failure
- For instructional effectiveness, closely coordinate classroom lectures (online soft skills) with hands-on (in person lab skills).
- Assess whether more traditional tools are as effective now as in past years. With digital tools, you can usually track engagement, giving you added insights while you are distanced from your students.



Prioritizing Lab Time

Like the rest of the world, COVID-19 means CTE must embrace new ways of doing things. The primary objective: prioritizing lab time. We strongly recommend blending e-learning with other distance learning resources and reserving in-person interactions for only essential situations, such as lab time and, if necessary, assessments.

What to Expect

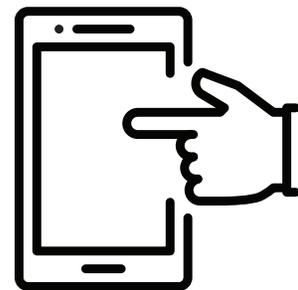
- Limits on how many students will be allowed in the lab at one time.
- Widely varying local, regional and national requirements to help contain the spread of COVID-19
- Increased responsibility for keeping labs clean and students safe.

- Modifications to lab tasks. For example, if closures continue, you may also need to facilitate online assessments or even temporarily replace lab time with digital simulations or YouTube videos.



Tips for Success

- The pre-pandemic instructional process usually included classroom sessions followed immediately by associated lab activities. Even after labs become more readily available, your students may need to complete the hands-on portion of their lab exercises one after the other, while you perform task assessments along the way.
- Understanding how to avoid idle time while in the lab is paramount to success. Since lab tasks take varying amounts of time, it may be necessary to create sets of related skills so students can make the most of their in-person instructional time.
- Avoid sharing computers to eliminate unnecessary contact around devices and keyboards.
- If possible, students should use personal portable devices rather than shared computers. If this is not possible, establish task sheet collection points that help with social distancing. You might also want to keep track of which students have completed which tasks.
- Post instructions at workstations so students do not have to gather or interact with you for basic lab instructions.
- Find novel ways to expand hands-on instruction. For example, students who already work in a skilled trade category may be able to complete certain tasks at work. Either a supervisor could provide basic documentation, or students could use personal digital devices to record the completion of their assignments.
- Resolve space challenges with strategies such as extended hours of operation, designated days for certain courses, and granting lab time only to a designated number of students in timed session blocks.
- Space work stations six feet apart.
- Weigh the benefits of allowing outside projects against the burden of cleaning them before and after contact. If possible, sequester outside projects in alternate spaces.



Guidelines for Cleaning and Disinfecting the Lab

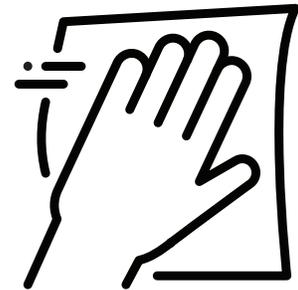
Normally, CTE would fall into the highest COVID-19 risk category. We believe everyone will benefit from the establishment of minimum risk standards that include the use of appropriate Personal Protective Equipment (PPE), social distancing, masking, and correct disinfection practices.

To that end, we recommend CTE instruction at a low-to-moderate risk level. (CDC, 2020):

- **Low Risk:** Virtual-only classes, activities and events.
- **Moderate Risk:** Small, in-person classes, activities and events. Groups of students stay together and with the same educator throughout the day and groups do not mix. Students remain at least six (6) feet apart and do not share physical objects, such as computers and tools.
- **High Risk:** Full-sized, in-person classes, activities and events. Students are not spaced apart, readily share classroom materials and mix between classes.

Tips for Success

Your instructional lab must be cleaned and disinfected, prior to the start of classes and throughout the day as students move from task-to-task. Follow CDC guidelines for all surfaces students and instructors are in contact with, including computer stations, tools, and more.



We recommend:

- Assigning specific individuals to monitor the cleaning process and improve consistency.
- Additional assistants if cleaning protocols are eroding class time.
- Staff training on the proper use of PPE.
- Staff training on CDC cleaning guidelines.
- Using CDC-approved detergents and water or EPA-registered household disinfectants. (EPA, 2020).
- Disposing of trash in accordance with CDC personal protection guidelines (CDC, 2020).
- Following the specific guidelines for cleaning lab equipment (COVID-19 Skilled Trades Touch Point Cleaning Checklist).

Students must:

- Sign the COVID-19 Lab & Shop Process Acknowledgment.
- Be trained on the use of PPE.
- Be distanced from each other by at least than six feet. Put distancing measures in place before the beginning of class (CDC, 2020).

- Wear an approved CDC face mask prior to entry and at all times while in the facility (CDC, 2020).
- Not share desks, work tools and equipment. If shared, these resources must be cleaned and disinfected after each use (OSHA, 2020)
- Be immediately separated from others and sent home if they become sick during the day (CDC, 2020)

Hygiene Procedures for Hands

Students and instructors must follow approved CDC hand hygiene procedures immediately upon entry into the lab and each time they change to a different station:

- Wash hands with soap and water for at least 20 seconds. If soap and water are not available, use hand sanitizer containing at least 60% alcohol (CDC, 2020).
- Remove wrist and/or finger jewelry (NADA, 2020) before putting on CDC-approved disposable gloves (CDC, 2020).
- Remove gloves without touching the outside (NADA, 2020) and dispose of them immediately.
- Repeat the hand hygiene procedure before using new gloves (NADA, 2020).



Choosing Online Solutions

Distance learning can be used effectively in almost every educational environment. Assignments such as term papers lend themselves easily to digital development and delivery. The same can be said for lectures, which easily migrate to online delivery. Happily, making lab time the priority for in-person learning can be managed fairly easily by shifting other instruction online.

There are two ways to go about instituting distance learning:

- Personally (or institutionally) create a solution using multiple digital options, including a generic Learning Management System (LMS).
- Utilize a comprehensive e-learning platform that comes enabled with the technology and content needed to manage everything from custom lectures to secure assessments.

The needs of learning communities are vastly different; your personal decision will depend upon your resources, comfort with technology and administrative direction.

Creating your own Solution

At the most basic level, online instruction is as simple as using solutions like Zoom, Microsoft Team, or GoToMeeting. Each of these platforms provide support for educators and, depending on the service you choose, include thoughtful features like scheduling, real-time interaction, and attendance tracking.

From there, you can create an online classroom augmented by other tools, such as task demonstrations via YouTube. You may also need to consider whether you can:

- Include a Learning Management System (LMS).
- Schedule and confirm attendance at set times.
- Assign lessons, lectures and assessments online, either as prepared by a publisher or as recorded by an educator.
- Back up live lectures and demos with recorded sessions to assist students with attendance challenges and as a failsafe during technology failures.
- Use a single method to assign lessons and exercises according to each student's progress in the course.
- Administer online assessments with secure log-in and time and access restrictions. If not, you may be forced to use school time for test-taking. Test integrity can also be monitored with the help of companies that supply live proctors and software made specifically for secure online assessments.



Choosing an Existing Solution

A skilled trade-specific Learning Management System (LMS) such as NCCERconnect, NCCER's online construction curriculum, can help you with online learning resources and assessments. To find out more, use a search engine to identify programs, visit individual websites and, if available, ask for a free trial.

Implementing E-Learning Solutions

For the best chance of success with new e-learning programs, you will need to develop a multi-tiered implementation program, that includes:

- **Hardware Assessments:** Do your CTE programs utilize the most current technology and is it capable of content delivery?
- **Connectivity or Infrastructure Assessments:** Do all parties have sufficient internet availability, reliability and speed?
- **Good Production Values:** Are proper dress, lighting, sound, backdrop, and broadcast production methods understood, and is the proper hardware in place?
- **Instructor Training:** Do instructors have the technical knowledge to work remotely, or will they need basic or even extensive training?
- **Written Back-Up Plans for Technology Failures:** Do you have plans to ensure students do not lose even more instruction time due to technology failures? For example, if connectivity issues cause a course to stop, asynchronous content could save the day.



Your feedback is welcome.

We hope you find these guidelines useful. If you have questions or suggestions, please reach out to the people who partnered on creation of these resources: NCCER at 888.622.3720 or www.nccer.org, Electude at 620.282-8693 or www.electude.com and/or CCAR at 888.476-5465 or www.ccar-greenlink.org.

Available Supporting Documents

Several additional resources have been created to help you adjust to skilled trade career education in the COVID-19 era. To access them, go to www.COVID-19CTE.training.

- COVID-19 Lab & Shop Process Acknowledgment, focusing on Personal Protective Equipment (PPE) and social distancing.
- COVID-19 Participant Questionnaire, to be used at the beginning of each in-person day.
- COVID-19 Recommended Supplies for Schools.
- COVID-19 Skilled Trades Touch Point Cleaning Checklist.
- An innovative, interactive COVID-19 online learning module specifically written for professionals in Career Technical Education (CTE).

