

ONLINE/REMOTE TRAINING & LEARNING RESOURCES FOR ADVANCED MANUFACTURING & ENGINEERING/ARCHITECTURE

ENGINEERING & ARCHITECTURE

- [Autodesk](#)
- [Creo](#)
- [immerse2learn](#)
- [SOLIDWORKS](#)
- [Spatial Vis](#)
- [Verisurf](#)

INDUSTRIAL AUTOMATION/MAINTENANCE

- [Amatrol / Klein Educational System](#)
- [Festo / Advanced Technologies Consultants](#)
- [LAB Corporation / SMC](#)
- [Tooling U-SME](#)

MACHINING TECHNOLOGY (INCLUDING CARPENTRY TECHNOLOGY)

- [Autodesk](#)
- [Haas CNC](#)
- [immerse2learn](#)
- [Mastercam](#)
- [NCSIMUL](#)
- [Tooling U-SME](#)
- [Verisurf](#)

MANUFACTURING TECHNOLOGY (INCLUDING CARPENTRY TECHNOLOGY)

- [Amatrol / Klein Educational System](#)
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- [Verisurf](#)

WELDING

- [American Welding Society \(AWS\) Online Educational Library](#)

OTHERS/PLATFORMS

- [Adobe](#)
- [California Emerging Technology Fund – Internet Access and Low-Cost Computers](#)
- [Caterpillar](#)
- [CirQLive](#)
- [Cisco Webex](#)
- [Chrome Remote Desktop](#)
- [CTECoalition](#)
- [EdPuzzle](#)
- [Kahoot](#)
- [Labster](#)
- [QPi Education](#)
- [Skill.FM Podstation](#)
- [Spatial Vis](#)
- [Splashtop Remote Desktop](#)
- [Other Manufacturing Education Enhancement Ideas](#)
- [Virtual Industry Tours and Engagement](#)
- [...List of Free Resources for Schools During COVID-19 Outbreak](#)

Adobe

<https://helpx.adobe.com/enterprise/kb/covid-19-education-labs.html> **FREE** access to Creative Cloud tools through May for home use by students attending schools that currently only provide lab access through May.

Amatrol / Klein Educational System

<https://amatrol.com/product/elearning-interactive-exercise/>

Klein Educational Systems will be holding regular web meetings on Tuesdays and Thursdays. Please reach out to Dan Whalen dan@kleineducational.com or Chris Gura cgura@kleineducational.com to reserve a spot in an upcoming webinar.

American Welding Society (AWS) Online Educational Library

<https://www.aws.org/education/page/online-educational-library>

Autodesk

<https://academy.autodesk.com/> **FREE** for students and educators along with free educational resources in manufacturing, construction, and production—including self-paced online courses, guided webinars, tutorials, industry contests, class projects, and curriculum for all levels.

For more info: <https://www.autodesk.com/education/covid19>

Free software download: <https://www.autodesk.com/education/free-software/featured>

For more information, contact John Peros, Technical Program Manager at Autodesk Education Experiences team: [LinkedIn](#)

Generative Design - is a CAD engineering software function in which a designer collaborates with artificial intelligence algorithms to generate and evaluate hundreds of potential designs for a product idea. The generative design process starts with defining the goals and constraints of the project.

- <https://www.autodesk.com/solutions/generative-design-video> (1:45)

Quickly generate high-performing design alternatives—many that you'd never think of on your own—from a single idea. With generative design, there is no single solution; instead, there are multiple great solutions. You choose the design that best fits your needs.

- <https://www.autodesk.com/solutions/generative-design/manufacturing>

This page has several embedded videos with customer testimonials about the advantages of generative design.

- [Generative Design for Manufacturing With Fusion 360 | Autodesk](#) (2:11)
- [What is Generative Design | Tools & Software | Autodesk](#) (2:24)

California Emerging Technology Fund – Internet Access and Low-Cost Computers

http://www.internetforallnow.org/get_affordable_internet_today

Caterpillar

<https://www.t4na.caterpillaruniversity.com/> **FREE** online training

CirQlive

<https://www.cirqlive.com/>

CirQlive connects web conferencing platforms to learning management systems, is giving 90 days of **FREE** usage of its integration tool as well as free consulting services for administrators on how to deploy or scale online learning. Schools need to provide the number of host licenses required and the company will set them up.

Cisco Webex

<https://www.webex.com/webexremoteedu.html>

Alternative to Zoom. Cisco Webex is offering **FREE** accounts for education. Those meetings can have up to 100 participants, high-definition viewing, screen sharing and personal rooms. The company has also developed a collection of resources to help teachers and families use the online virtual conference program.

Chrome Remote Desktop

<https://remotedesktop.google.com>

Creo

<https://www.ptc.com/en/academic-program/academic-products/free-software#>

COVID-19 Offerings: <https://www.ptc.com/en/product-lifecycle-report/ptc-commitment-customers-covid-19>

CTE Coalition

<https://ctecoalition.com/>

EdPuzzle

<http://edpuzzle.com>

Festo / Advanced Technologies Consultants

[Festo Didactic](#) is offering **FREE** access to their online eLearning platform, Mindsight. If you are a College, University, or High School offering online classes for your Engineering and Technology programs, this is a great opportunity to keep your students engaged at home.

To learn more about MindSight: <http://bit.ly/MindSight-01>

To started on getting free access: <https://cli.re/K8ndXV>

Please contact me or Pat Uetz (PUetz@atctrain.com) if you have any questions or need additional information.

Haas CNC

<https://www.haascnc.com/video.html>

Haas has an entire certification program that runs 20 to 30 hours that can lead up to scheduling an in-person certification if desired. One instructor created google form worksheets for each unit, with 15 minutes video, followed by an online quiz.

<https://learn.haascnc.com/?fbclid=IwAR13kMjYaiTmc9MUEZlgefzJFKzvz2Cn7Wrnh3PAqDh2blQ-pNUv3hV2rHHI>

immerse2learn

<https://web.immerse2learn.com/web/product-category/advanced-manufacturing/>

Kahoot

<https://create.kahoot.it>

LAB Corporation / SMC

- E-Learning-200 for Industrial Automation: [link](#)
 - SMC is offering a contribution to deal with the COVID-19 precautionary period:
 - Please note the review is a full product
 - **This product is completely “free” for 15 days of use** in the USA by both students and instructors. ELEARNING-200 will be a free registration from now until **April 30th** for anyone who would like to use our product in their classroom to supplement their physical attendance in a classroom.
- Automation Studio: <https://www.famictech.com/en/Products/Automation-Studio/Educational-Edition>

This is an industrial design program utilized by Disneyland, 3M, etcetera; that they offer to Educational institutes for a fraction of the Industrial price.

Please reach out to reserve a spot for webinar if you'd like to know more.

Labster

<https://www.labster.com>

Mastercam

<https://signup.mastercam.com/free-mastercam-training>

Full set of Mastercam core classes for **FREE**, from now through June 30th.

NCSIMUL

<https://www.ncsimul.com>

QPi Education

www.qpieducation.com

Teach hands-on, maker-centered projects with QPi's online-learning platform.

Skill.FM Podstation

<https://www.skill.fm/>

SOLIDWORKS

Apps for Kids at Home: Teach Remotely with Free Classroom Curriculum: [link](#)

3DExperience: [link](#)

Spatial Vis

<https://egrove.education/products>

Splashtop Remote Desktop

<https://www.splashtop.com>

Tooling U-SME

<https://www.toolingu.com/>

Other Manufacturing Education Enhancement Ideas

Consider introducing your students to some of these manufacturing related technologies

- **Thermoset 3D printing** - Thermosets are plastics that are irreversibly cured. The curing process changes the resin into an insoluble polymer network. This means that unlike thermoplastics, which are widely used for 3D printing, re-heating thermosets for recycling or reshaping is not possible. For this reason, thermosets are ideal for high-temperature applications.
 - Link: <https://youtu.be/A3oDI76wYm4> (2:11)
 - Link: <https://youtu.be/6S42bxorSWk> (2:08)
- **Sintering** - make (a powdered material) coalesce into a solid or porous mass by heating it (and usually also compressing it) without liquefaction.
 - Link: <https://youtu.be/z5327SSM6G0> (1:28)
 - Link: <https://youtu.be/yiUUZxp7bLQ> (2:17) DMLS “Direct Metal Laser Sintering”
 - Link: https://youtu.be/9E5MfBAV_tA (2:30) SLS “Selective Laser Sintering”

Verisurf

<https://www.verisurf.com/blog/article/free-metrology-training>

Virtual Industry Tours and Engagement

www.nepris.com

List of Free Resources for Schools During COVID-19 Outbreak

<https://thejournal.com/Articles/2020/03/13/Free-Resources-Ed-Tech-Companies-Step-Up-During-Coronavirus-Outbreak.aspx?Page=1>

Tips and Comments

Find out if students can get access to software on the campus computers via a Remote Desktop. This will allow them to access software such as Solidworks, MasterCAM, [NCSIMUL](#) and so on.

If we have enough interest from schools and colleges on some of the above resources, we will be able to qualify for discounts for those that are not free.

The above is by no means a comprehensive list. Please reach out if you have any questions, would like access, or have additional information you would like to share. I can also assist in connecting you directly with the providers so as to avoid possible delay in response.

Stay well,

Ruishan Chow

Regional Director, Employer Engagement

Advanced Manufacturing, San Diego-Imperial Counties

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