

CREATE Faculty Training on CBE Learning

Created by Tom Wylie, 6/27/23

CREATE Faculty Training on CBE Learning

Training topics for this training session:

1. Review the steps to developing a module
2. Review a Learning Thread
3. Open Education Resources
4. Simulations
5. Review the development of a learning object
6. Introduction to creating Learning Objects
 - a. PowerPoint
 - b. Converting PPT to PDF
 - c. Voice over PPT
 - d. Creating videos with a camera
 - e. Creating a screen CAM video to show how to use software

Website to get Sample Documents:

Handouts for the Workshop is available at the Project Website:

https://ate.is/Scaling_CBE

2 Parts to the CREATE Project

Faculty Prof. Dev.

Develop Faculty Skillset:

- *Convert technical courses to a CB/Hybrid model
- *Effectively teach the CB/Hybrid courses

Prepare the Faculty to:

- *Utilize OER material for teaching
- *Develop online learning objects:
 - *Videos, simulations & PPT/PDF
- *Deliver instruction in a CB/Hybrid model

Prog. Controller 1

Mike &
Scott

Prog. Controller 2

Mike &
Scott

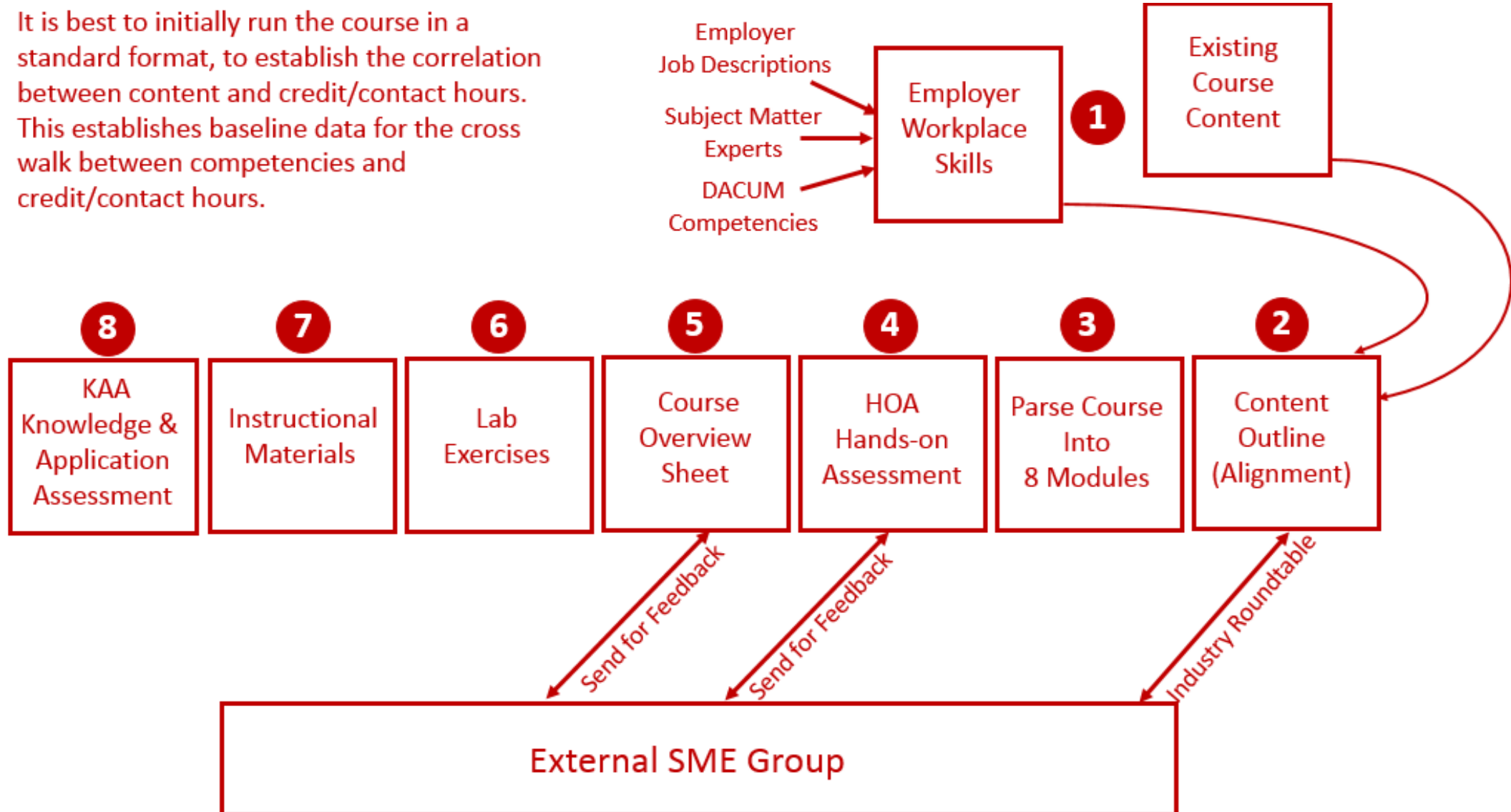
Elect. Troubleshoot

Course Conversion:

- *Re-Align the Curriculum
- *Convert the courses to a competency-based/hybrid model

Reverse Design:

It is best to initially run the course in a standard format, to establish the correlation between content and credit/contact hours. This establishes baseline data for the cross walk between competencies and credit/contact hours.

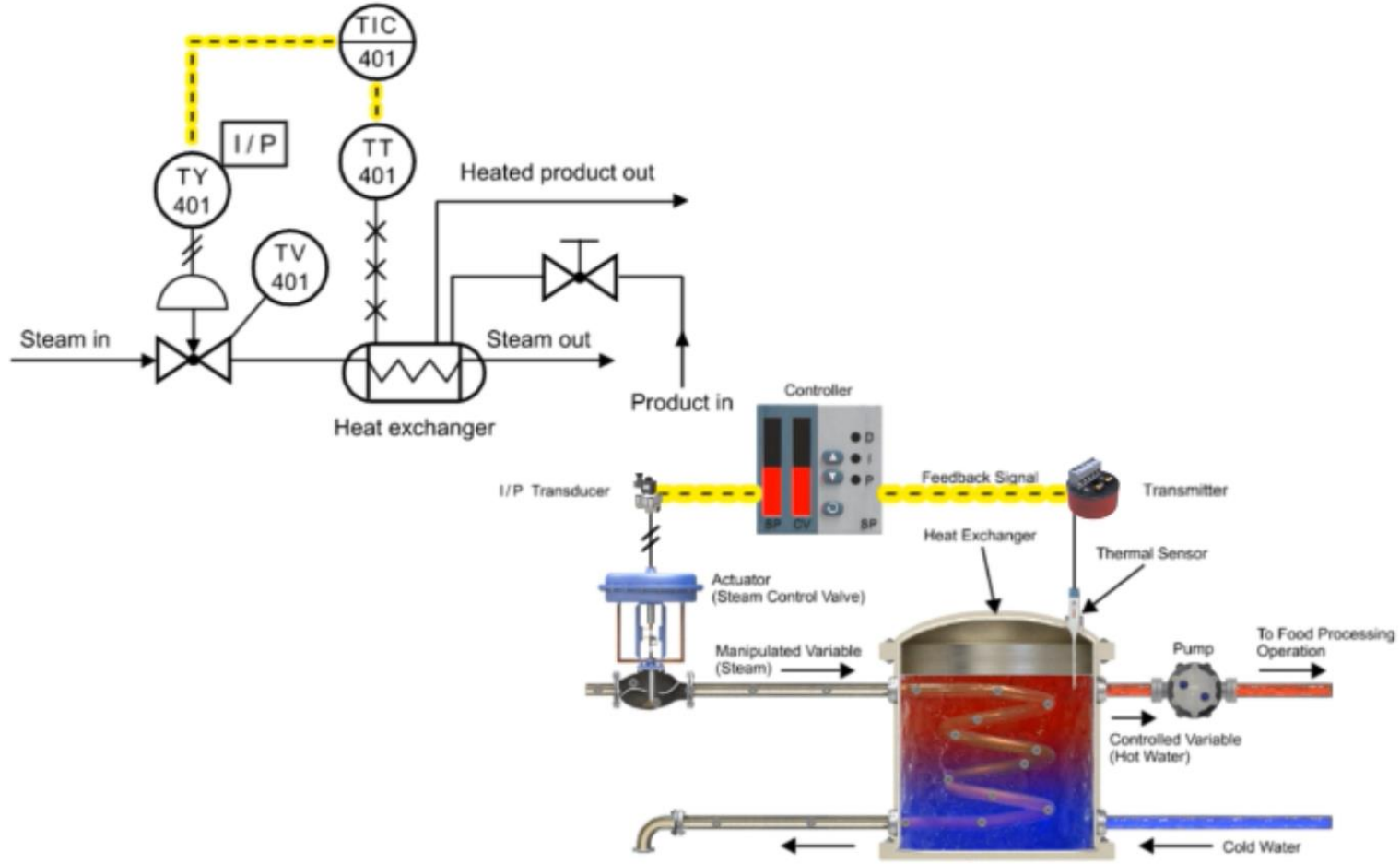


Thread of Learning:

	Course Topics	Design
	Course Outcomes	Design
Hands-On	Performance Assess.	Assessment
	Lab Exercises	Preparation
PPT/PDF Reading Videos	Instructional Mat.	Preparation
	Online Assessment	Assessment
	Practice Quizzes	Preparation

Many good Videos at EngineerTech.Org

Piping and Instrumentation Diagrams



Download Embeddable Simulation with Interactive Quiz Questions:
bit.ly/1IspWI8

OER Material

Open Educational Resource Material

- *Open for anyone to use in their courses
- *Any material developed with funds from a federal grant is OER
- *View the OER PowerPoint

Simulations using Automation Studio:

Used to prepare students for the Hands-On Lab Exercises:

*Electrical

*Motor Control

*VFD

*Pneumatics

*Hydraulics

*PLCs

Simulations do not replace Hands-On Learning

View the Examples of Simulations on the Project Site:

Building a Learning Object:

In the next week, could each of you identify a course that could be improved on, and sketch out what type of learning object you would like to create, and Mike or myself can work with you to create it. No presentations, no pressure; just a way of better learning how to apply this information into a curricular change.

Software used to Create Objects

TechSmith (Techsmith.com), located in Michigan, developed and distributes Snagit and Camtasia. These products are targeted toward Faculty. They are simple to use and give immediate results. Snagit is an image or video capture software, and Camtasia is a product with multiple uses, but in the end it produces high quality videos. MP4 is the preferred video format for creating instructional videos. MS PowerPoint is the other key software that is needed to create illustrated graphics and animations. Google Slides does not have all of the features that MS PowerPoint has.



Snagit 2019



Camtasia 2019 Recorder



Microsoft PPT



Snagit 2019 Editor

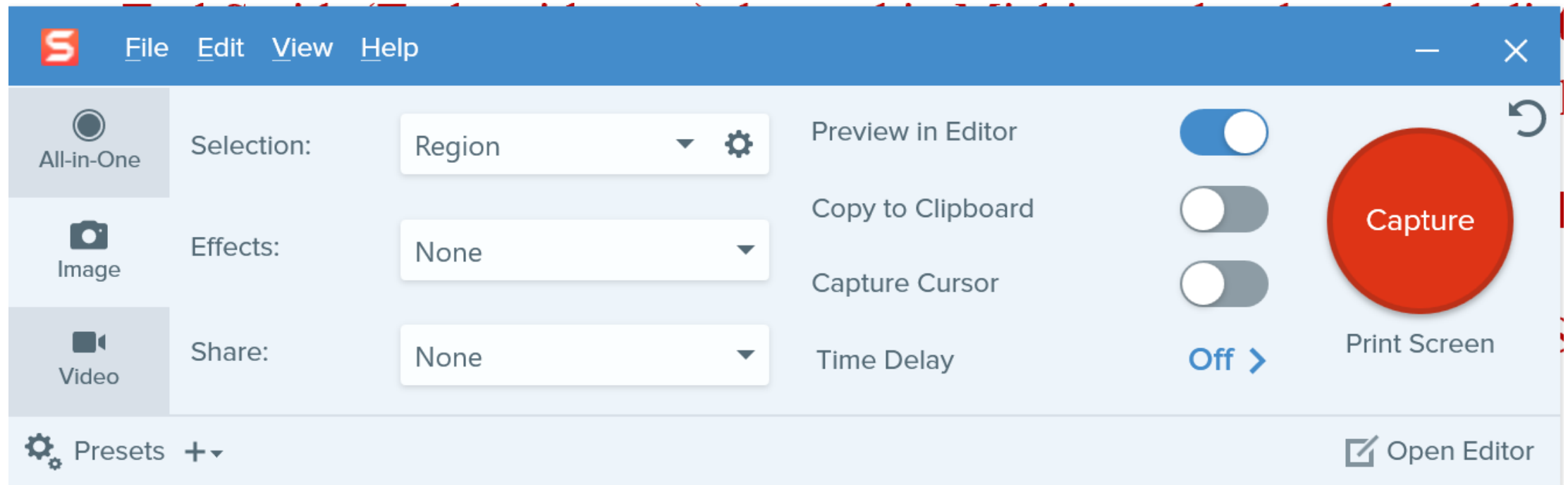


Camtasia 2019

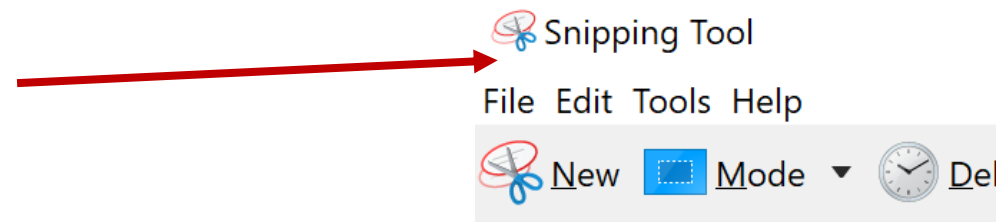


TechSmith Snagit 2019 (Capture):

This is the interface for Snagit capture. The user can designate a hot key such as the “PrtSc” key (Print Screen), which will bring up the cross hairs for capture.



Windows 10 Snipping Tools



TechSmith Snagit 2019 Editor:

Tools to modify the image

The screenshot displays the TechSmith Snagit Editor interface. The main workspace contains a detailed electrical circuit diagram for a motor control system. The diagram includes a 480V three-phase supply (L1, L2, L3) connected to a fused disconnect (A), an ammeter (B) showing an RMS Current of 9.4 A, a motor (M1) with a Nameplate Current of 14.9 A, and a control circuit with a stop button (D), start button (E), and thermal relay (F, G). A red arrow points to a specific component in the diagram, labeled "Lab 4.5".

The top toolbar includes various editing tools: Favorites, Arrow, Text, Callout, Shape, Stamp, Fill, Move, Step, More, Undo, and Redo. The right sidebar shows the "Quick Styles" panel with a "Theme" dropdown set to "Basic" and a grid of color and shape options. Below this is the "Tool Properties" panel, which includes settings for Fill, Text Color, Shape, Shadow, Opacity (set to 100), and Type.

Shows recently captured images

The bottom section of the interface shows the "Recent" and "Tag" sections. The "Recent" section displays a list of recently captured images, including a circuit diagram, a technical drawing, a tablet, and a hand using a stylus. The "Tag" section is currently empty. To the right of the recent images are several utility icons: a magnifying glass for search, a dropdown for zoom level (100%), a dropdown for image size (1493 x 621px), and icons for Effects and Properties.

TechSmith Snagit Editor Library

File Edit Image Share View Help Snagit Editor Sign In

Editor Capture

Type to search

January

February 200
March 249
April 202
May 114
June 180
July 180
August 180
September 371
October 220
November 246
December 185
2021 350
January 185
February 84
March 81
Applications

Name	Size	Date	Modified	Type	Dimensions	Tags
Jan 28, 2021						
Camtasia says I don't have enough disk space, but I do.		Jan 28, 2021 1:24:29 PM				
industrial safety		Jan 28, 2021 1:24:09 PM				
Eastern Iowa Community College		Jan 28, 2021 1:23:25 PM				
Workforce Development Digital Library		Jan 28, 2021 12:57:51 PM				
Under the following terms:		Jan 28, 2021 12:53:41 PM				
Copyright / Licensing		Jan 28, 2021 11:30:04 AM				
Piping and Instrumentation		Jan 28, 2021 11:29:43 AM				
2. In this Piping & Instrumentation Diagram, which device is the heat exchanger?		Jan 28, 2021 11:22:08 AM				
Piping and Instrumentation Diagrams		Jan 28, 2021 11:19:30 AM				
Open Courseware & Educational Resources for Technology & Engineering Technology		Jan 28, 2021 11:19:15 AM				
Open Courseware & Educational Resources for Technology & Engineering Technology		Jan 28, 2021 11:17:33 AM				
CC BY NC		Jan 28, 2021 10:56:42 AM				
Professional Control Amplifier		Jan 28, 2021 10:50:20 AM				
Tank level		Jan 28, 2021 11:15:38 AM				
Open Courseware & Educational Resources for Technology & Engineering Technology		Jan 28, 2021 11:07:28 AM				
Tank level		Jan 28, 2021 11:06:39 AM				
Open Courseware & Educational Resources for Technology & Engineering Technology		Jan 28, 2021 10:56:42 AM				
Professional Control Amplifier		Jan 28, 2021 10:50:20 AM				

User can go to any Month & Day for images

Four Primary Applications for Snagit

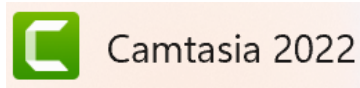
1. Capture a portion of a screen and save as a .PNG file or to clipboard
2. Record video from an existing video. I sometimes use this if I am recording something from a recording on a website that I want to save, or I am capturing an important video on YouTube, just as a backup in case they pull it down and I need to create one from scratch.
3. Capture a panoramic scrolling image. This is if I have a PDF that I want to backup, but the properties will not allow a download or to print it. I will scroll down through the document and save as a PDF. Always follow good legal practices.
4. Capture a block of text from the screen and “grab text” which will use OCR (Optical Character Recognition) and copy all and paste into a document so I can edit the text. I find old labs I created 10 years ago and I do not have the original files. Instead of re-typing them in, I use Snagit to capture the text as an object and convert it to editable text.

How to Create Videos

Video of how to Operate a CNC Controller



.MP4 or .MOV File

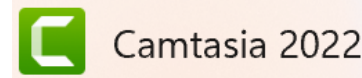
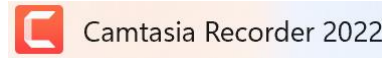


.MP4 File



Video Quiz

Video on how to Setup RSLinx
Recording Computer Screen



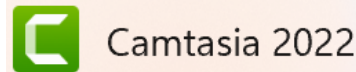
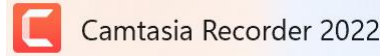
.MP4 File



Video Quiz

How to Create Videos

Voice over PPT Video of a Print
Recording Computer Screen
Recording voice as you annotate
(Wacom tablet or mouse)



Video Quiz

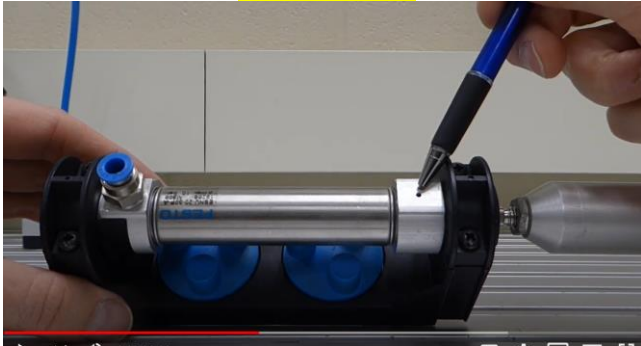
.MP4 File



Video Quiz

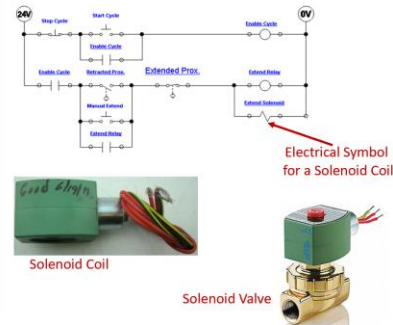
Learning Objects the User Navigates

Videos



PPT/PDFs

Solenoid Coil:



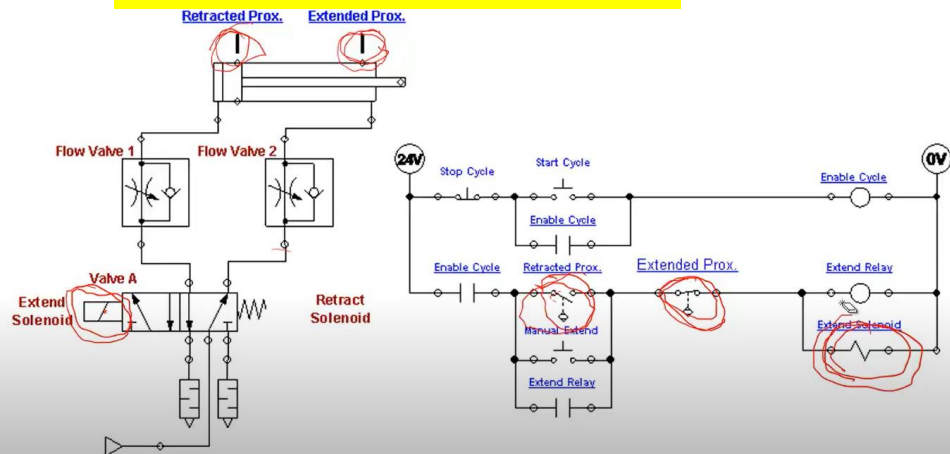
This slide shows the electrical circuit for the continuous operation circuit.

The most important part of this is to identify the solenoid coil symbol in the last rung of the circuit. This example shows a 2-way valve (2 ports). It is a valve that opens or closes off the flow of air, fluid, gas, etc.

The most important thing about these valves is that they have 2 parts: The valve (spring and plunger) that is actuated by the magnetic force of an electric solenoid. This type is termed an ASCO (manufacturer), red hat, due to the red cap. The cap is removed with a screwdriver, then the coil can be removed. If the device is on, you will feel the magnetism with a screwdriver. Sometimes the coil is bad (it opens), or the plunger sticks and must be replaced.

An important thing to remember is that if the coil is 120Vac, and is removed from the valve with power still on, a screwdriver must be inserted into the opening in the coil to keep the coil from burning up. No need to do this with a 24Vdc coil.

Voice over PPT Video



Independent Learning Objects are posted in an LMS for student access. These objects can be viewed in any sequence. The upper left graphic shows a video that was shot with a camera, explaining a single acting pneumatic cylinder.

The middle graphic is a PPT that will be converted to a PDF, then posted in the LMS.

The bottom graphic is a voice over PPT, where the graphic was put into PPT, then annotated with a stylus on the computer touch screen.

All of these objects can be viewed on a smart phone, phablet, tablet or computer screen.

Example Videos:

1. A video shot in the lab showing how to do something
(Video Links on Scaling Project site, Josh Coupling)
2. A screen cam video (22_0614 AS Basic Electrical Simulation)
3. A voice over PPT in Canvas (Voice over PPT with Wacom)

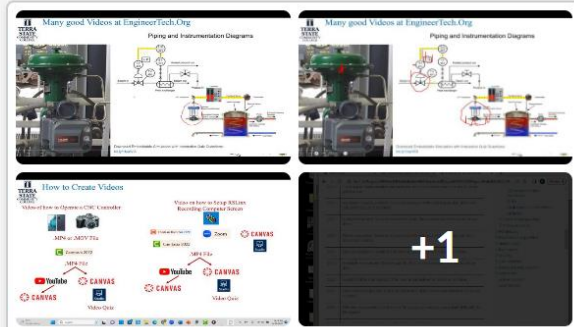
Videos in Canvas:

- TERRA STATE COMMUNITY COLLEGE
- Account
- Dashboard
- Courses
- Calendar
- Inbox
- History
- Follett Discover
- Studio
- Commons

My Library

Date Added

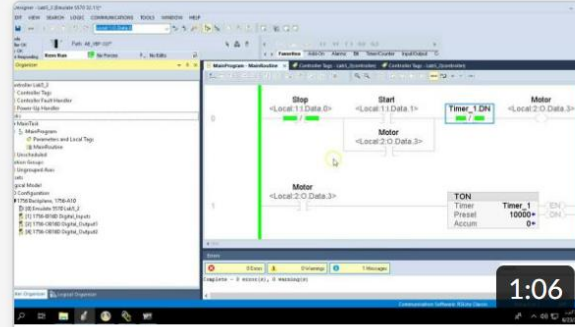
View all



Tom Videos

Collection

Tom Wylie



Tom First Video

Tom Wylie

Collection of Videos in Canvas:

My Library > Tom Videos

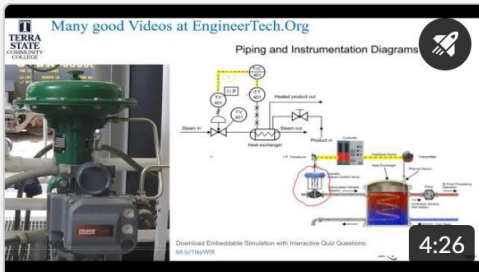
RECORD ADD

Airplane Icon means a Quiz was created for the Video

Date Added

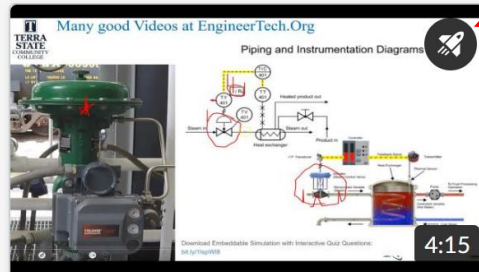
View all media

More options



Voice over PPT with Wacom 062423

Tom Wylie



Voice over PPT P&ID mouse

Tom Wylie



Tom on creating videos 062523

Tom Wylie



23_0622 basic recording of help file on RSLogix500

Tom Wylie



CompactLogix Overview

Tom Wylie

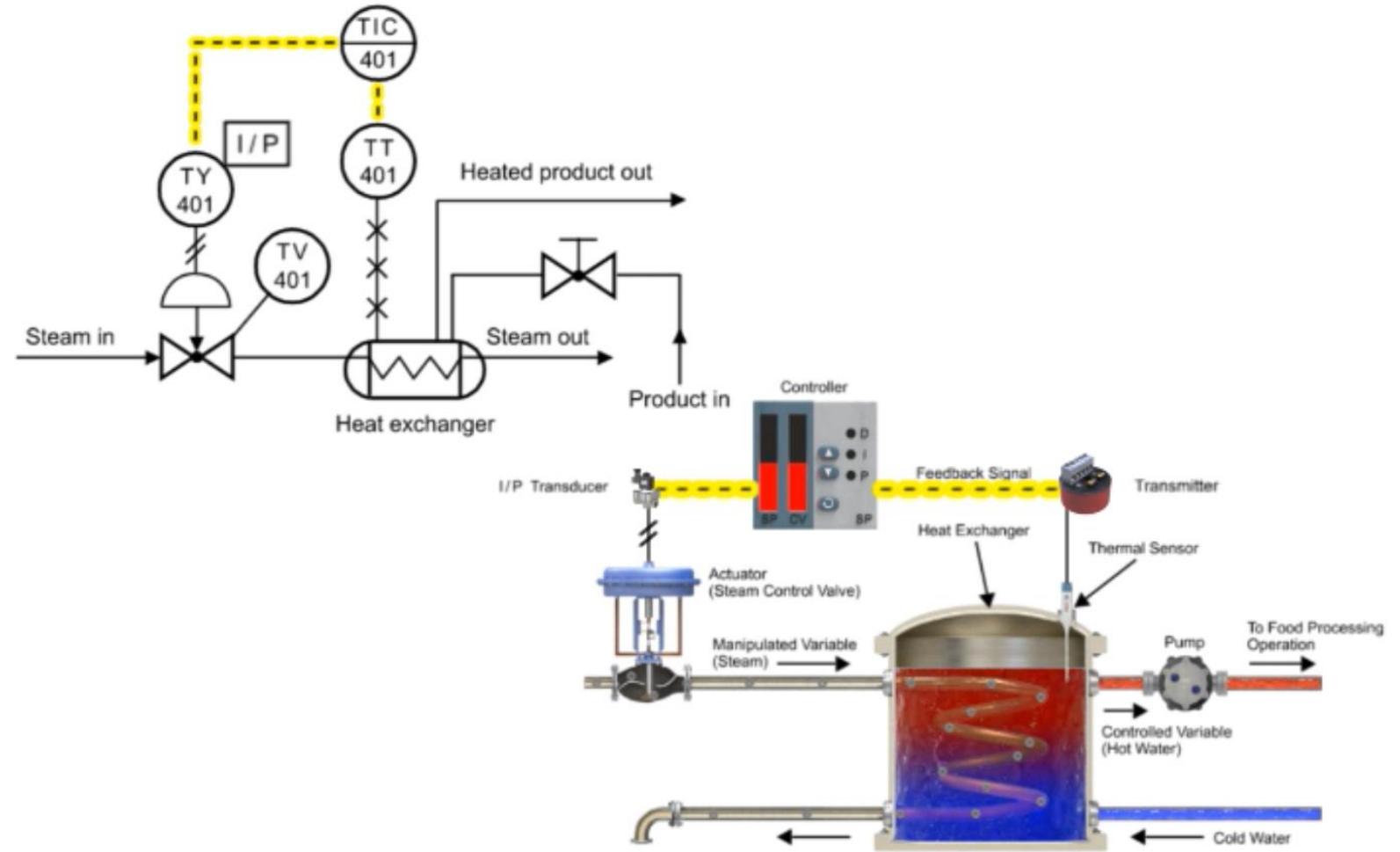
Collection of Videos in Canvas:

The image shows a video player interface with a quiz overlay. The video player has a progress bar at the bottom showing 0:07 / 3:41. The quiz overlay is titled "Question 2 of 5" and contains a multiple-choice question: "The External Tool in Canvas used to record a screen recording video is called:". The options are Adobe Premier, Camtasia, Zoom, and Studio. The "Studio" option is highlighted in yellow. Below the question, there are two buttons: "Re-watch" and "Continue". The "Re-watch" button is also highlighted in yellow. The background of the video player shows a blurred image of a computer screen with various icons and text, including "Recording Computer Screen" and "Studio".

YouTube **CANVAS** **CANVAS** **Studio** **Video Quiz** **Video Quiz** **Questions in the Video** **Video Quiz** **Studio** **Re-watch since last question** **Re-watch** **Continue**



Piping and Instrumentation Diagrams

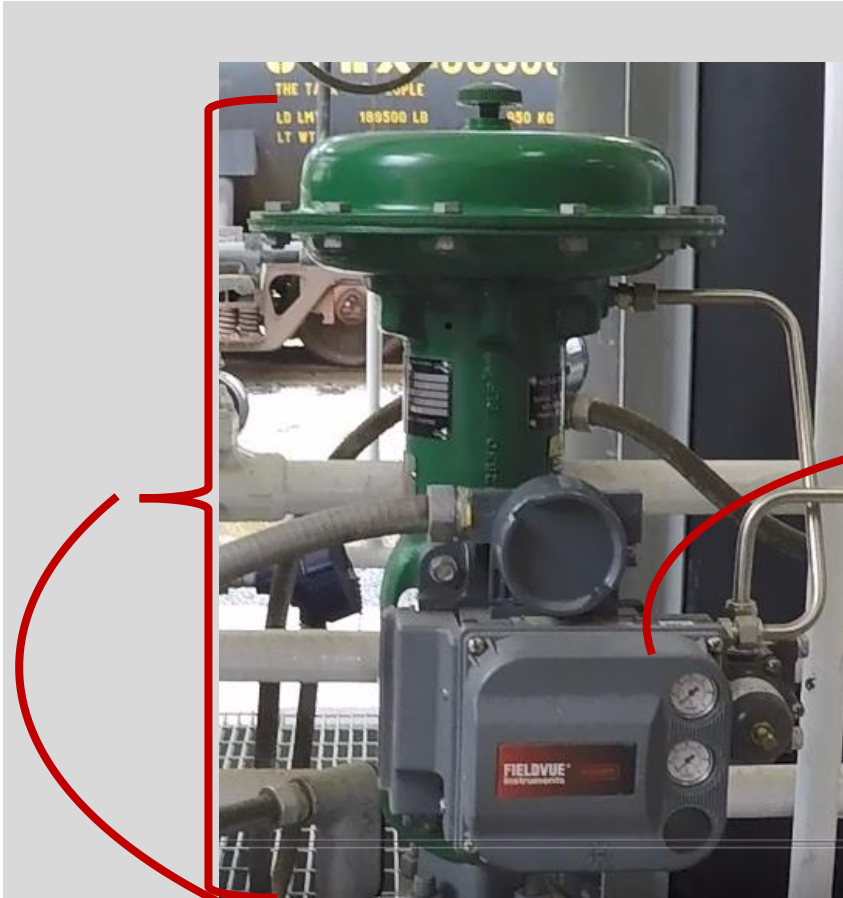


Download Embeddable Simulation with Interactive Quiz Questions:
bit.ly/1IspWI8

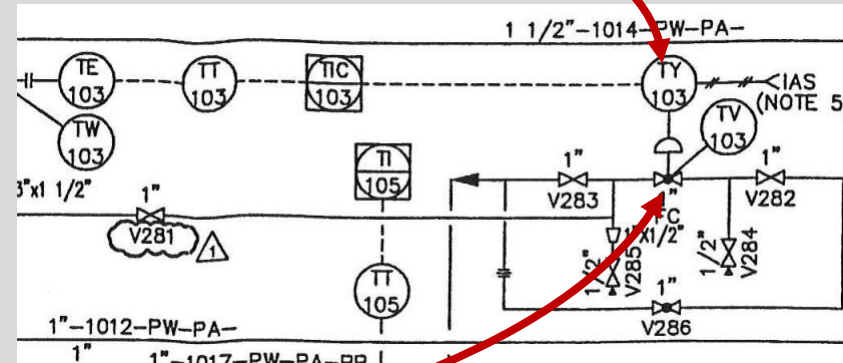




Interpreting a P&ID to the actual hardware:



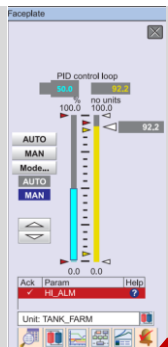
Digital Valve Controller (I/P)



TCV-103 Control Valve

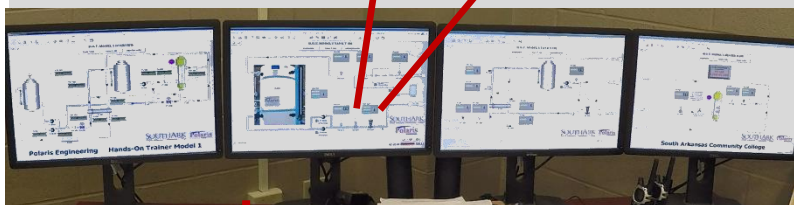


Signal Flow in a Distributed Control System:



Controller Faceplate

50%



Control Console

50%



Delta V DCS System

12 mA



DVC6200 (I/P)



9 psi

1/2 Open



70 psi

Charge Tank

This Concludes this Instructional Document

This document contains information originally developed by Northwest State Community College, through a DOL TAACCCT grant (Round 4). The link to the materials and the Creative Commons licensing can be found by clicking on the following link.

<https://www.skillscommons.org/handle/taaccct/17746>

The original content was modified to meet the needs of Terra State Community College.



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