CALYPSO Live Online Training Classes

Ryan Stauffer – East Region Applications Engineering Manager
ryan.stauffer@zeiss.com

Live Online Training

What are “LIVE ONLINE TRAINING CLASSES”?

- *A **DIRECT EQUIVALENT** for traditional ZEISS Classroom Training*
- *Live, Interactive, Instructor-led training via the GoToTraining platform*
- *Organized individual Hands-On activities with required deliverables*
- *One-on-One “office hours“ with the instructor via phone or web meeting*

Live Online Training

Advantages of Live Online Training Classes

- *No Travel for Customer*
- *Organized, uniform training experience compared to onsite training*
- *Customer learns on their equipment*
- *Customer has their programs developed during class on their machine for future reference*
- *ZEISS has record of the customer's participation and understanding of material (from exercise deliverables)*
- *Entire Group is not slowed down by individuals struggling to complete exercises*
- *Those needing special help receive it one-on-one during "office hours" after formal training sessions*

Live Online Training

Classes Currently Available

- ***CALYPSO BASIC (delivered by Charlotte QEC)***
- ***CALYPSO ADVANCED (delivered by Charlotte QEC)***
- ***CURVE (delivered by Charlotte QEC)***
- ***PiWEB (delivered by Charlotte QEC)***
- ***FREEFORM (delivered by Charlotte QEC)***
- ***O-INSPECT OPTICS (delivered by Internal Training and Developement team)***

Live Online Training

Training Materials

- ***Official ZEISS Training Materials (Training Manuals, Sensor and Measuring Strategy Cookbooks)***
- ***Customized notes to match instructor's presentations***
- ***Nine Lab Activities per Class with required deliverables***
- ***Training Kit (sent prior to training, to be returned to ZEISS)***

Live Online Training

Training Kit (CALYPSO Basic and Advanced)

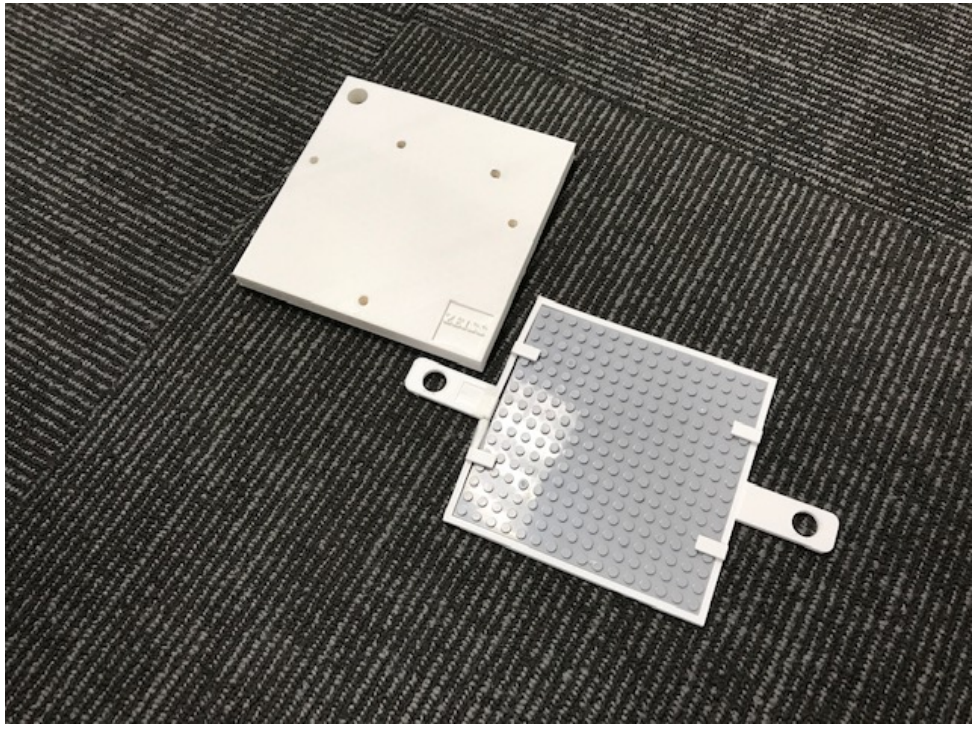
Live Online Training

Training Kit (CALYPSO Basic and Advanced)

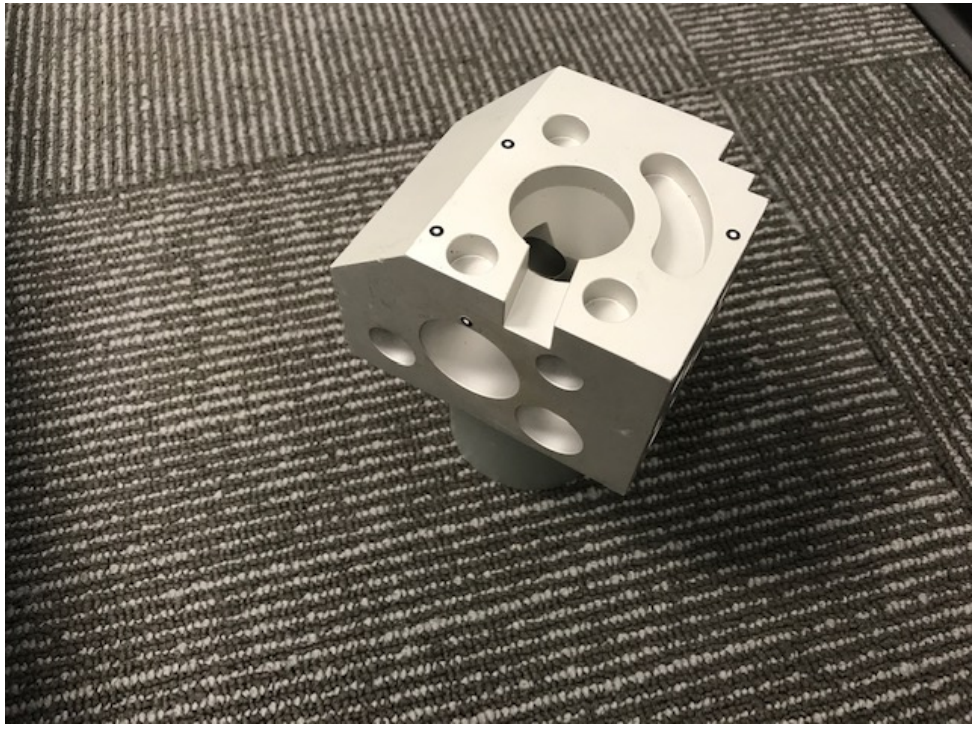
Live Online Training

Training Kit (CALYPSO Basic and Advanced)

Fixturing



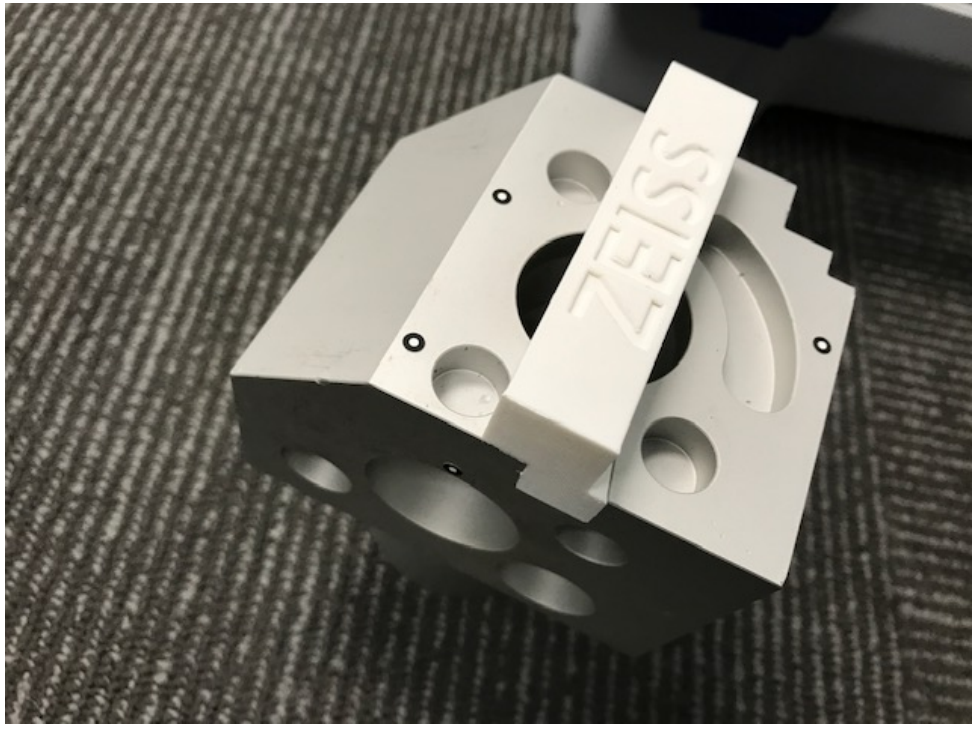
Training Part



Live Online Training

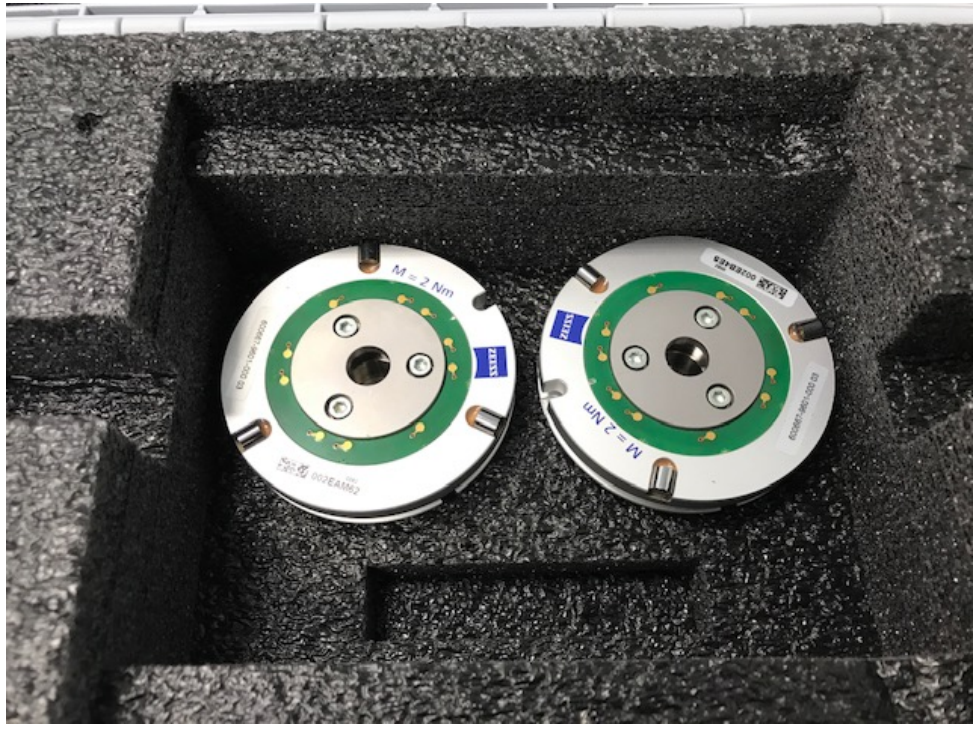
Training Kit (CALYPSO Basic and Advanced)

Navigation Obstruction



Adapter Plates

(for Customer's sensor type)



Live Online Training

Training Kit (CALYPSO Basic and Advanced)

Styli

CAD Models, Clamps, Screws, and additional training parts

Live Online Training

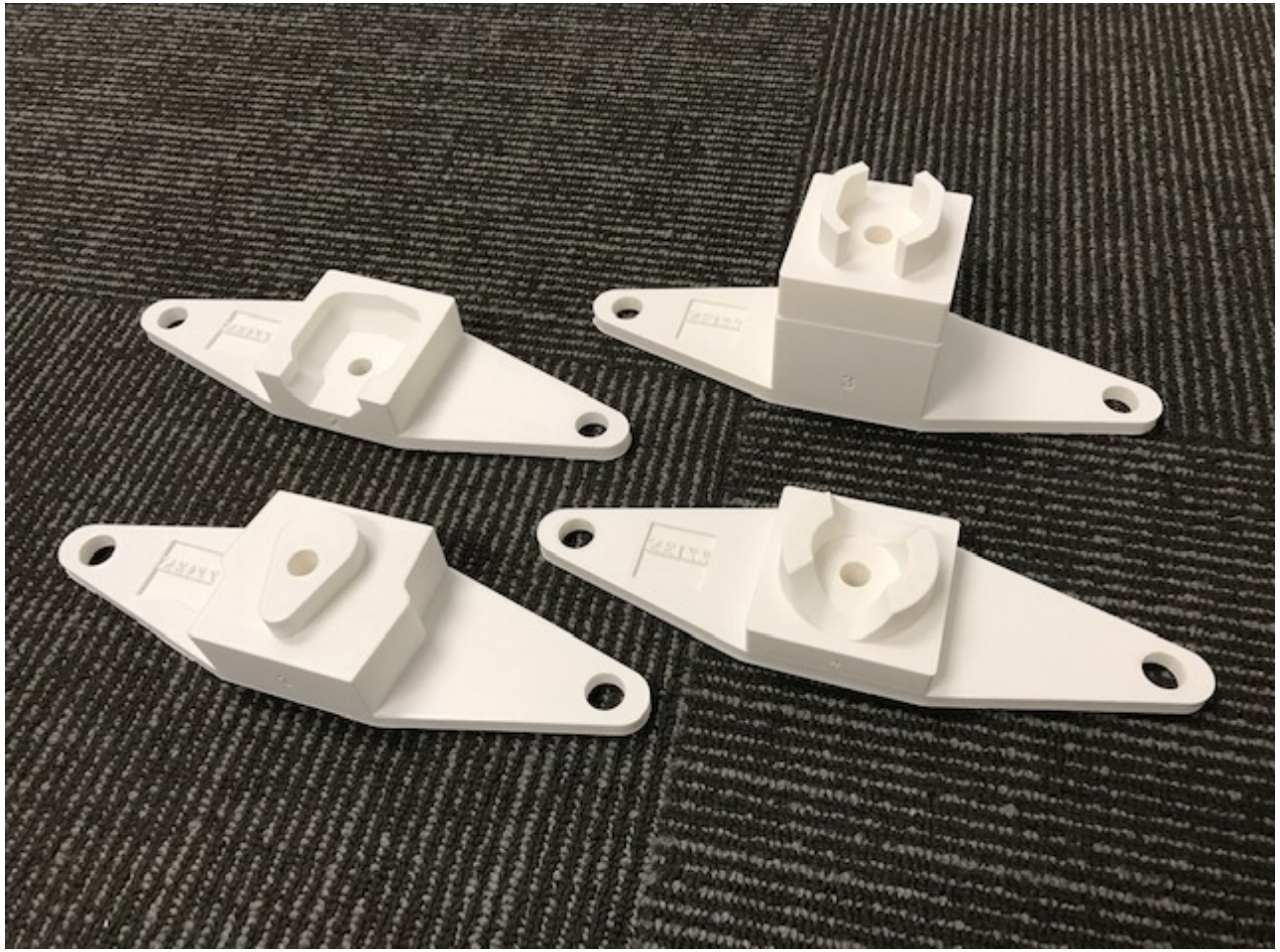
Training Kit (CALYPSO Basic and Advanced)

ZEISS Branded Items for customer to keep!

Live Online Training

Training Parts - Curve

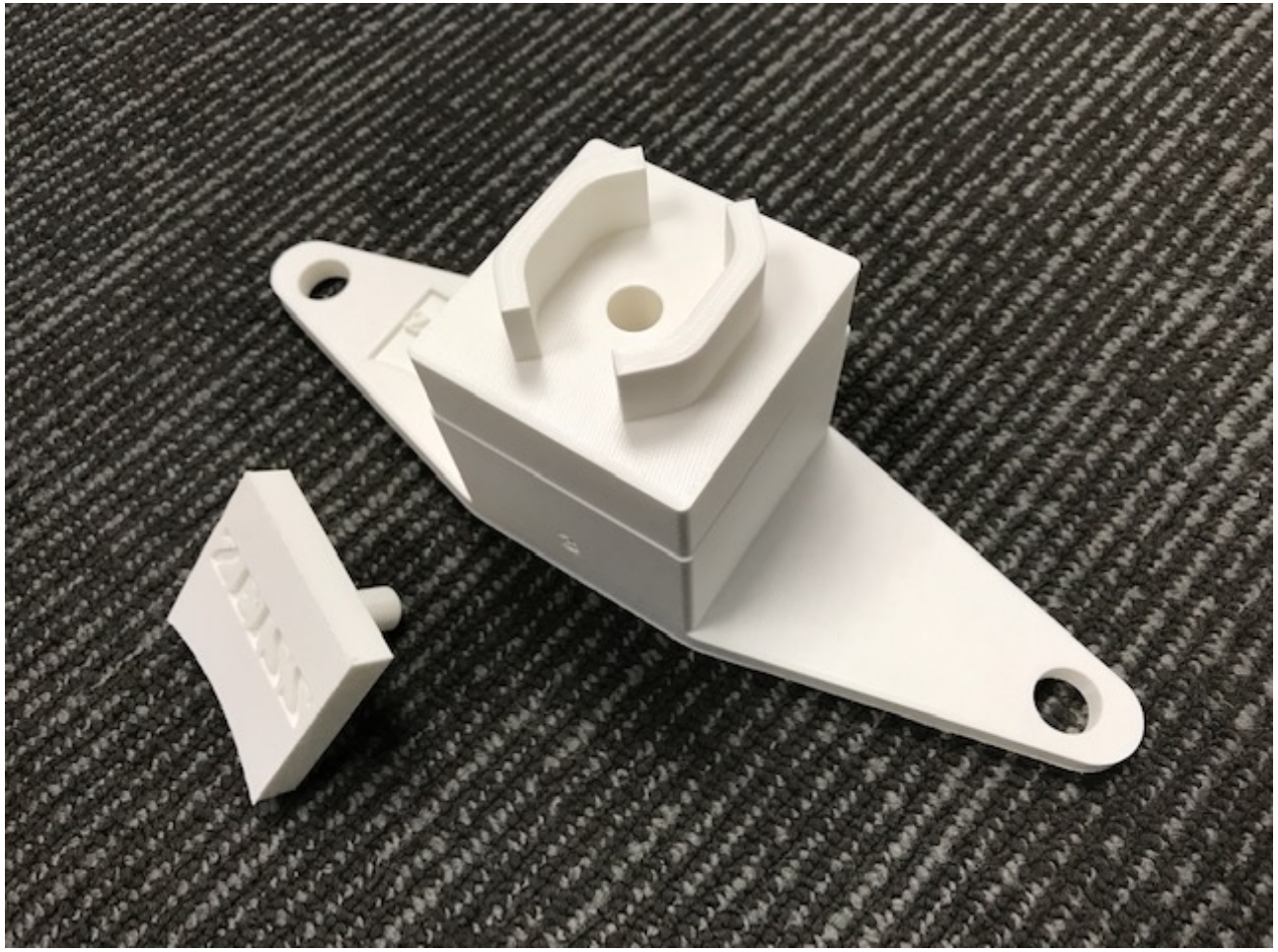
Four different parts to simulate different curve applications



Live Online Training

Training Parts - Curve

One two-piece assembly for multi-stylus curve measurement



Live Online Training

Training Parts - Curve

One two-piece assembly for multi-stylus curve measurement

Live Online Training

Official ZEISS Training Manuals and Cookbooks

CALYPSO Basic Manual

CALYPSO Measuring Strategies Cookbook

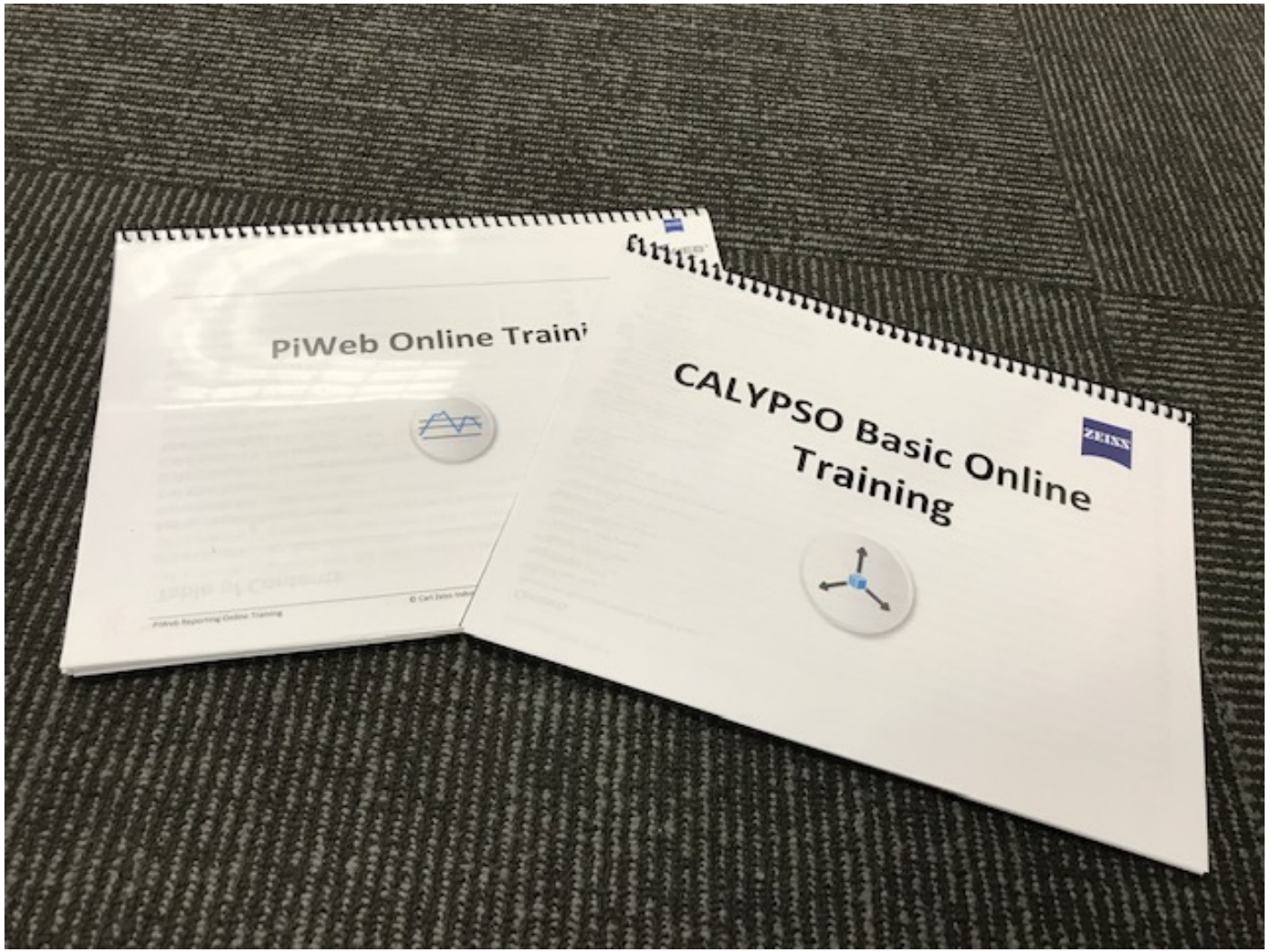
CALYPSO Sensor Cookbook

Live Online Training

Specialized Training Notes

Each Live Online Training Class student receives specialized training notes that match the Instructor's lessons as presented.

These notes include more clear step-by-step procedures, helpful in the online training environment.

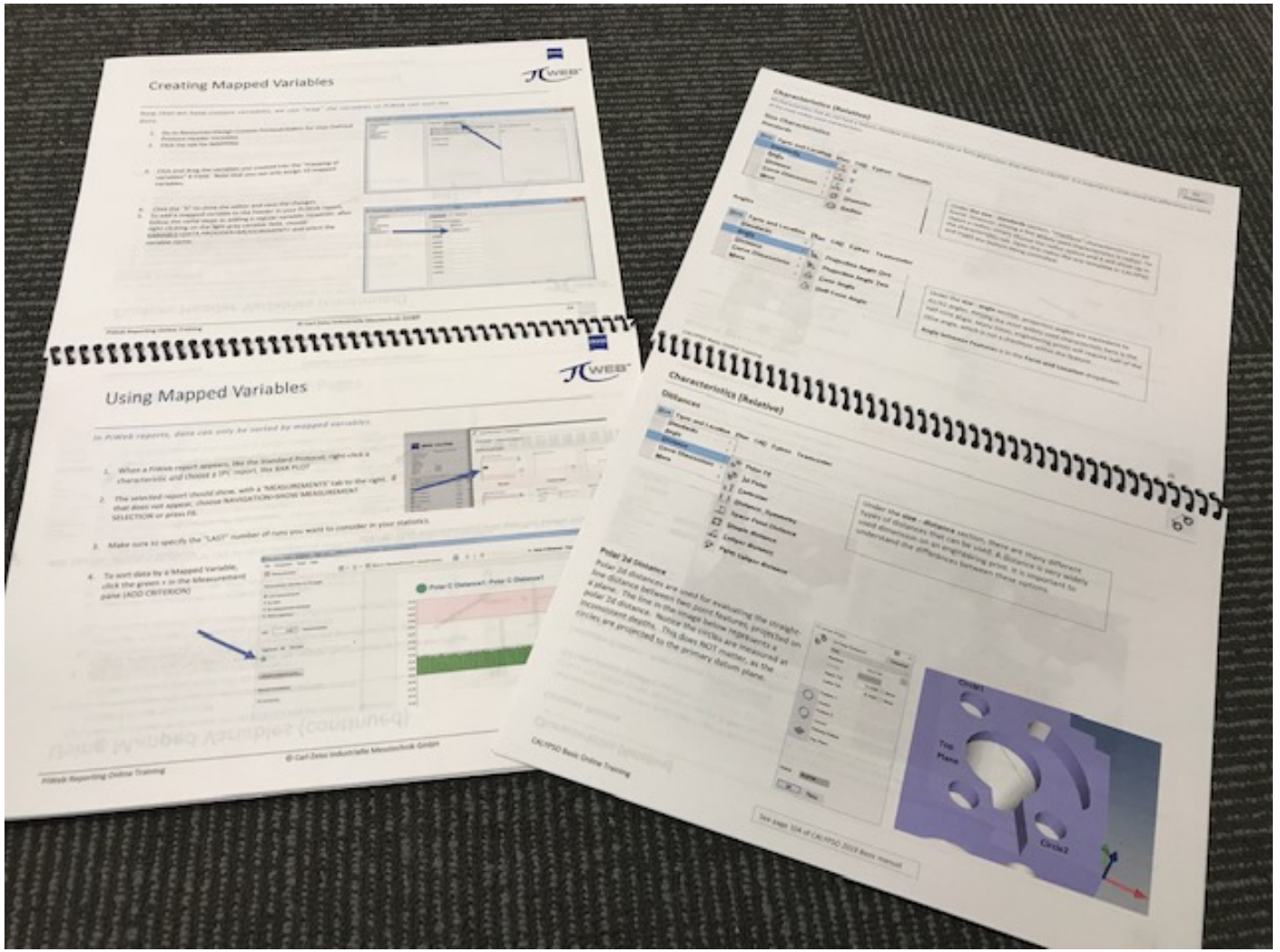


Live Online Training

Specialized Training Notes

Each Live Online Training Class student receives specialized training notes that match the Instructor's lessons as presented.

These notes include more clear step-by-step procedures, helpful in the online training environment.



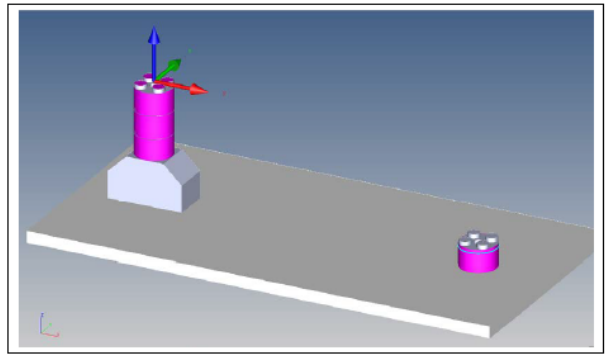
Live Online Training

New Lab Activities with Clearly Defined Deliverables

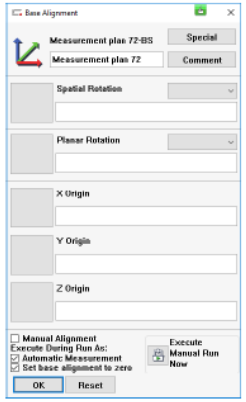
CALYPSO Basic:

ALIGNMENT 2:

Setup: Create the build as shown below: a "Base Assembly" with three stacked "Round Pieces" to the left of the base plate and one "Round Piece" to the right of the base plate.



FILL OUT THE BASE ALIGNMENT BELOW:
(Names and Directions)



Features required:

- Cylinder on three stacked Round Pieces (Named "Left Cylinder")
- Plane on Top of Cylinder (Named "Top")
- Circle around Right Round Piece (Named "Right Circle")

Base alignment: Create the base alignment as shown above.
The Cylinder MUST be Spatial Datum.

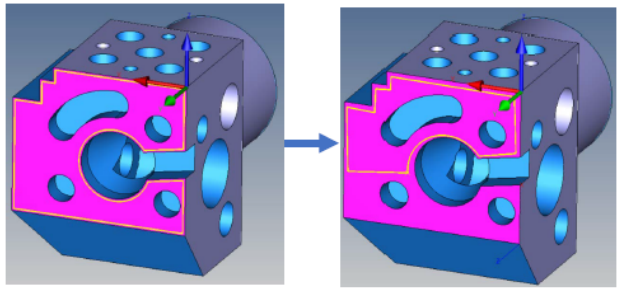
QUESTION:

Could you use a Cylinder on the Right Round Piece for Planar?

5. **Open each feature used and note the strategy. Some of these strategies, by default, are NOT going to work! Be sure to note the following things:**

- Down tip contacting fixture plate or other fixturing while scanning.
- Polylines being too close to walls for the given probe size.

Example Polyline Modification to be made:



Knowledge Check:

Remember the rule for Cylinders vs Circles:

If the Depth of the shaft is LESS THAN the Diameter of the shaft, a Circle should be measured, otherwise, a Cylinder would be more appropriate in most circumstances.

What feature should be used to obtain the 60mm diameter?

Live Online Training

New Lab Activities with Clearly Defined Deliverables

CALYPSO Advanced:

Day 5 – Afternoon Lab Exercise

Autorun

Objective: Create an autorun desk that includes an individual measurement plan and a basic pallet.

Overview: Autorun is a simplified user interface for executing measurement plans. If one or more operators will run commonly used measurement plans, the Autorun environment makes this task straightforward, while protecting the programming choices within the measurement plan.

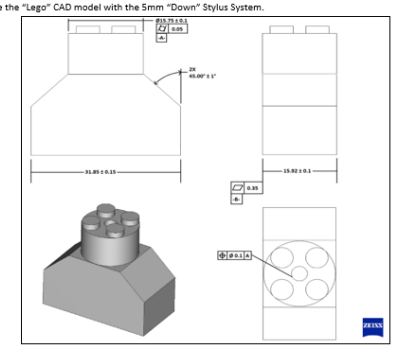
Autorun can be used to execute qualification programs and individual measurement plans, as well as measure workpieces that are arranged in a pallet. In this exercise, we will create a new Autorun desk that includes one of each. Legos will be used as a simple, easily-palletized workpieces:

Student Notes:

Exercise:

1. **Write a measurement plan to measure the Lego workpiece.**

   Use the "Lego" CAD model with the 5mm "Down" Stylus System.



CALYPSO Advanced Online Training © Carl Zeiss Industrielle Messtechnik GmbH 1

Day 2 – Morning Lab Exercise

Start and Iterative Alignments

Exercise: Iterative Alignment

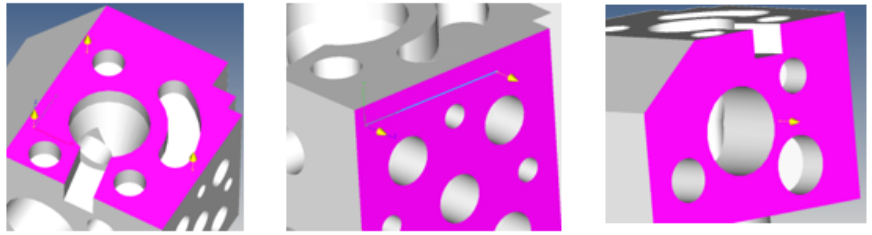
1. **Create a new program and establish base alignment as shown. This exercise is NO CAD. Keep the part in the same location as the exercise above.**

It is important that the three base alignment features are probed EXACTLY as shown:

Spatial: 3 Point Plane on Top
- Point 1: Under the banana feature, to the right of the half circle
- Point 2: To the left of the top left bore, directly in the middle of the bore and angled plane.
- Point 3: To the left and above the bottom left bore, directly in the middle of the bore and angled plane.

Planar: 2d line on the Left Face
- Point 1: To the closer end of the face, towards the front of the part. About 5mm down from the top plane
- Point 2: Above the top, back most bore, and towards the center of the face. About 5mm down from the top plane.

Y-Origin: Single point on the front
- Point 1: To the right of the large bore on the front face, directly in the middle.



CALYPSO Advanced Online Training © Carl Zeiss Industrielle Messtechnik GmbH 5

Live Online Training

New Lab Activities with Clearly Defined Deliverables

Curve:

CALYPSO Curve - Exercises

Exercise:

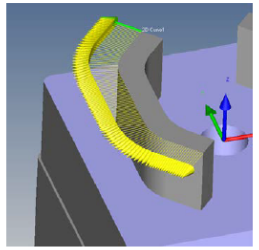
1. **Mount Curve Training Block 3 to the CMM.**
2. **Start a new CALYPSO program.**
3. **Ensure you have a 3mm or 5mm stylus, with a minimum working length of 25mm qualified and ready to use for this lab.**
4. **Ensure that the recommended Scanning Strategy Defaults are loaded.**
5. **Load the "Curve Part 3.sab" CAD Model.**

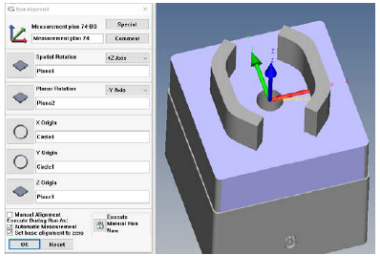
Student Notes:

ALL PROGRAMMING WILL BE FROM THE CAD MODEL! DO NOT TAKE ANY MANUAL PROBINGS UNTIL RUNTIME!

6. **Align the Part on the Top Plane of the Cube, Center Hole, and Front Plane as shown.**
7. **Create Clearance Planes.**
8. **Create one Curve as shown below by using the CAD "wireframe" at the top of the part.**

DO NOT SECTION THE MODEL.





CALYPSO Curve Training - Rev 2 © Carl Zeiss Industrielle Messtechnik GmbH 50

CALYPSO Curve - Exercises

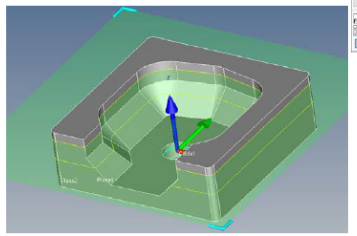
Exercise:

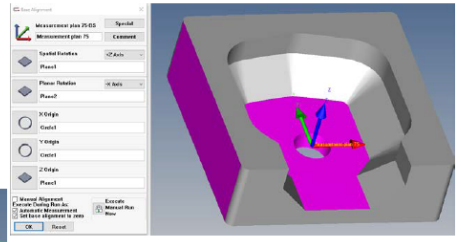
1. **Mount Curve Training Block 2 to the CMM.**
2. **Start a new CALYPSO program.**
3. **Ensure you have a 3mm or 5mm stylus, with a minimum working length of 25mm qualified and ready to use for this lab.**
4. **Ensure that the recommended Scanning Strategy Defaults are loaded.**
5. **Load the "Curve Part 2.sab" CAD Model.**

Student Notes:

ALL PROGRAMMING WILL BE FROM THE CAD MODEL! DO NOT TAKE ANY MANUAL PROBINGS UNTIL RUNTIME!

6. **Align the Part on the Inside Plane, Center Hole, and Left Plane as shown.**
7. **Create Clearance Planes.**
8. **Section the CAD Model at +5mm**
9. **Section the CAD Model at +12mm**





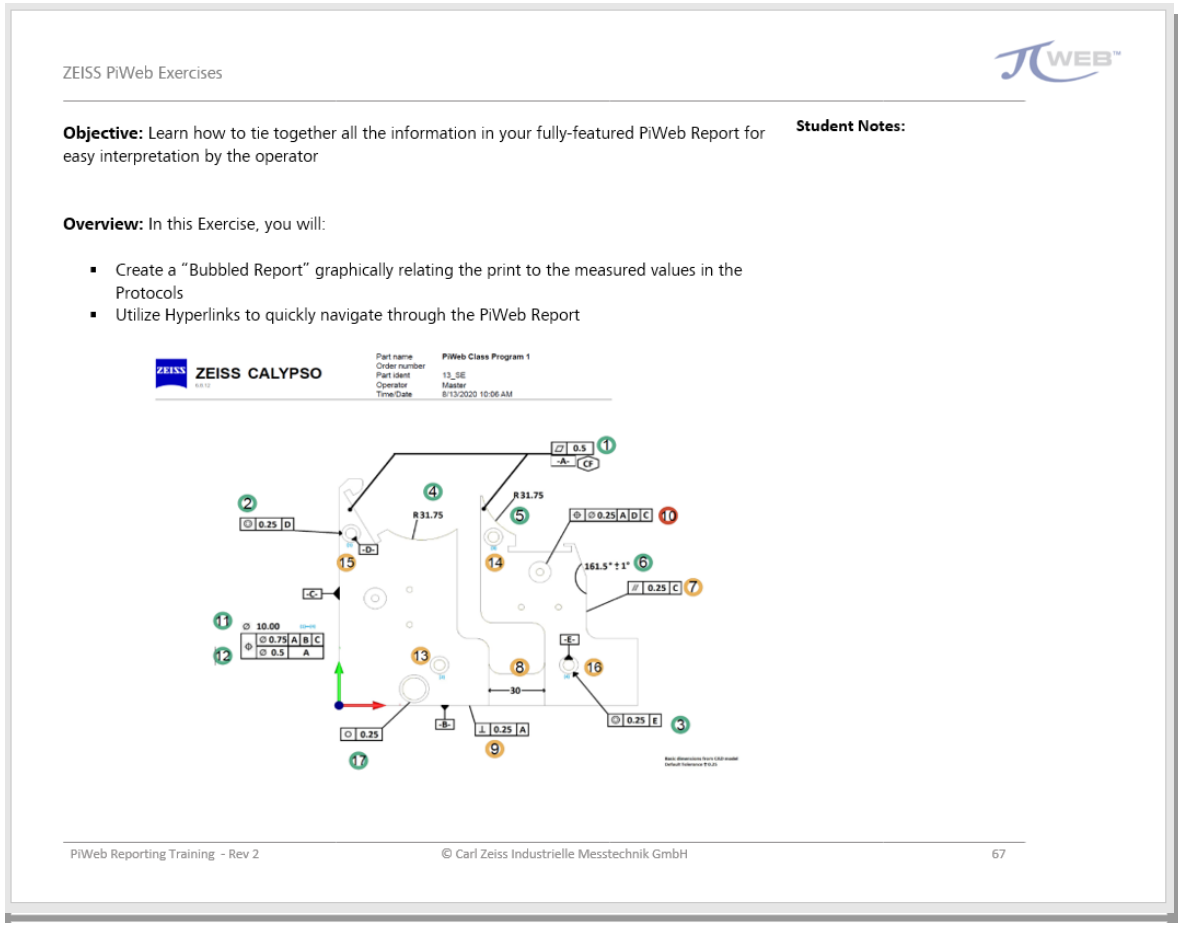
REFER TO THE NOTES for "CAD Spline Creation: Sectioning CAD" for more information!

CALYPSO Curve Training - Rev 2 © Carl Zeiss Industrielle Messtechnik GmbH 43

Live Online Training

New Lab Activities with Clearly Defined Deliverables

PiWeb:



ZEISS PiWeb Exercises

Objective: Learn how to tie together all the information in your fully-featured PiWeb Report for easy interpretation by the operator

Student Notes:

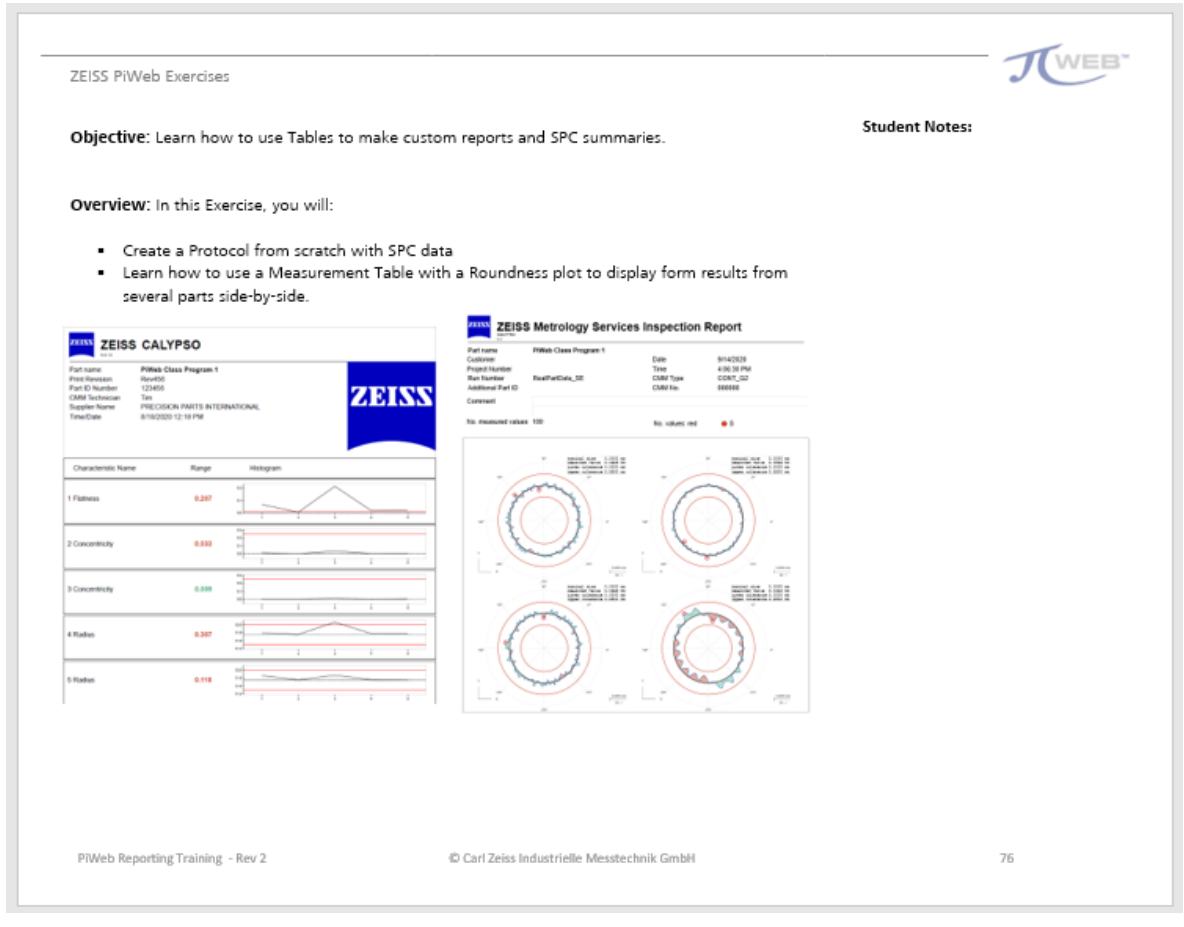
Overview: In this Exercise, you will:

- Create a "Bubbled Report" graphically relating the print to the measured values in the Protocols
- Utilize Hyperlinks to quickly navigate through the PiWeb Report

ZEISS CALYPSO

Part name	PiWeb Class Program 1
Order number	
Part ident	13_SE
Operator	Master
Time/Date	8/13/2020 10:06 AM

PiWeb Reporting Training - Rev 2 © Carl Zeiss Industrielle Messtechnik GmbH 67



ZEISS PiWeb Exercises

Objective: Learn how to use Tables to make custom reports and SPC summaries.

Student Notes:

Overview: In this Exercise, you will:

- Create a Protocol from scratch with SPC data
- Learn how to use a Measurement Table with a Roundness plot to display form results from several parts side-by-side.

PiWeb Reporting Training - Rev 2 © Carl Zeiss Industrielle Messtechnik GmbH 76

Live Online Training

Training Schedule

CALYPSO Basic and Advanced:

Live Online Instruction:

9:30 to 11:00 Monday-Friday and 2:00 to 3:30 Monday- Thursday

Daily Individual Lab Practice / Instructor “Office Hours“:

8:30-9:30, 11:00-12:00, 1:00-200 and 3:30-5:30

Live Online Training

Training Schedule

PiWeb:

Live Online Instruction:

1:00 to 2:00 Monday-Friday and 3:00 to 4:00 Monday- Thursday

Daily Individual Lab Practice / Instructor “Office Hours“:

2:00 to 3:00 and 4:00 to 5:00

Live Online Training

Training Schedule

Curve and Freeform:

Live Online Instruction:

11:00 to 12:00 Monday-Friday and 2:30 to 3:30 Monday- Thursday

Daily Individual Lab Practice / Instructor “Office Hours“:

1:00 to 2:30 and 3:30 to 5:00

Live Online Training

Successful, Proven Classes

Overwhelmingly positive reviews:

Q1

Customize | Save as

Overall, how satisfied are you with the CALYPSO Online Basic Training

Q2

Customize | Save as

How satisfied are you with the organization/flow of the class?

Q3

Customize | Save as

How satisfied are you with the Instructor and their technical knowledge of the subject with the ability to convey it?

Q4

Customize | Save as

How satisfied are you with the personal communication/help from your instructor?

Live Online Training

Successful, Proven Classes

Overwhelmingly positive reviews:

- Great instructor, very knowledgeable and was willing to help with any issue I came across. Cannot say enough good things about this training I preferred it over an in-class session because I could follow along with the instructor's every move

- Outstanding class. Would not have known this was the pilot class had it not been mentioned. Zeiss never fails to exceed my expectations.

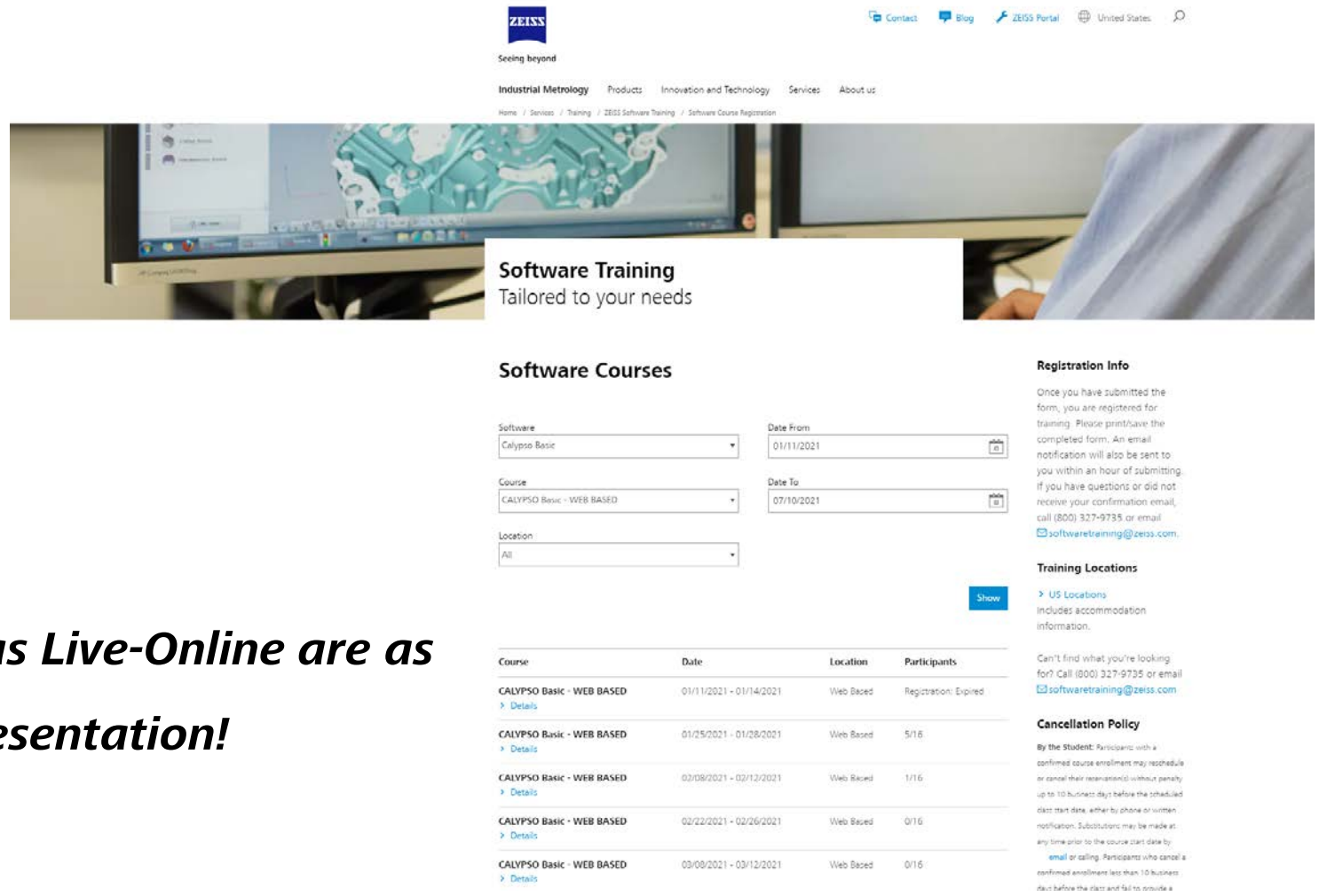
- We finished last week, the training went very well even though it was online. I have to say it has been the best training in terms of structure and trainer's preparedness. I have attended trainings at Hexagon, Nikon, and LK in the past, but ZEISS really stands out.

Live Online Training

Classes Available NOW

Visit:

https://www.zeiss.com/metrology/services/training/software-training/software-course-registration.html?donotcache



All classes labeled as Live-Online are as described in this presentation!

Live Online Training

Questions?

Please contact Ryan Stauffer at ryan.stauffer@zeiss.com


ZEISS