

ENGINEERING
TOMORROW

Danfoss

EMEA Course Catalog 2024

Danfoss Power Solutions Training Learning for Growth



Danfoss Power Solutions Product Training Program

Welcome to the Danfoss Power Solutions training program. We're excited to work with you to help grow your in-depth understanding of Danfoss products and solutions.

There is power in sharing knowledge — it empowers our team, strengthens relationships, and can be used as a powerful sales tool.

Our training program has grown over the years to meet the needs of our sales partners. We have designed these courses to deepen your knowledge and confidence in our product line which, in turn, can help you meet your business goals.

This catalog offers a large variety of training opportunities. We offer training solutions ranging from entry-level online modules to professional, hands-on classes, where you will have the chance to work on real systems and machines.

Save time and effort! Start at the level that best matches your competency and work your way up to your educational goals! Plus, we've already laid out learning paths to make building your knowledge base easier.

Finally, we also invite you to visit the Danfoss headquarters in Nordborg and Ames, and tour one of our Application Development Centers. We would love to meet you in person and further strengthen our partnership.

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Technical trainings roadmap

Our training roadmap is structured with five levels of increasing complexity, offered in various formats.

Each training level was designed with a specific target audience in mind — meaning those taking the courses can start at the level most appropriate for them, depending on their current knowledge level and competencies. Each level is a pre-requisite to the one that follows. If possible, it's recommended to take the courses in the right order.

The goal of these technical training courses is to help Danfoss Power Solutions sales partners grow and achieve their goals.

The legacy courses have been integrated into the training materials to offer a comprehensive overview of the updated Danfoss Power Solutions product portfolio.

Choose the course that works best for you and start your journey into Danfoss Power Solutions technical training.

Level 100



SELF-STUDY



VIRTUAL TRAINING

Target audience:

All Distributors

Learning goal:

Staying informed about new products and options and learning how to do business with Danfoss.

Level 200



VIRTUAL TRAINING



SELF-STUDY



CLASSROOM TRAINING

Target audience:

Distributor Sales

Learning goal:

Understanding the product offering in detail and using that knowledge to identify opportunities.

Level 300



VIRTUAL TRAINING

Target audience:

Distributor Frontline Sales

Learning goal:

Using learned qualities, benefits, and value proposition of Danfoss products to identify and present the best solution for the customer.

Level 400



CLASSROOM TRAINING

Target audience:

Distributor Technical Sales

Learning goal:

Designing advanced hydraulic systems to offer the best Danfoss system solutions for the customer.

Level 500



CLASSROOM TRAINING

Target audience:

Authorized Service Partners

Learning goal:

Diagnose/troubleshoot faulty machines and components.



PRODUCT AND APPLICATION COURSES

Virtual and On-Site Classroom Training

Virtual Classroom - Instructor-Led Courses (VILT)

Virtual instructor-led (VILT) courses are delivered electronically (live) each day. The typical daily session is four-hours in length (unless otherwise specified) with breaks in between topics. Each session incorporates live demonstrations of product materials and instructor interaction via the internet, allowing for an up-close and personal learning experience that is second to none. Participants will interact with instructors and other attendees while engaging in classroom activities and group discussions in real time, creating a personalized learning environment, much like you would experience if you were physically in the classroom. Academic testing is accomplished via the internet, utilizing secure professional web-based software. Once linked to the internet, and using nothing more than your computer, web-camera and microphone, you can join our virtual classroom from the convenience of your computer regardless of location.

Requirements to attend the virtual classroom include: valid email address, personal computer, access to the internet, web camera and phone line or headset to be used with a computer. Course materials will be shipped prior to start of class. Students will be required to attend and participate in all sessions, demonstrate proficiency in the course topics, and successfully complete an online exam with a score of 70% or higher in order to receive a certificate of completion. Students who do not take the exam, or who score lower than a 70%, will not receive a certificate.

On-Site Classroom - Instructor-Led Courses (ILT)

Our on-site instructor-led (ILT) courses range anywhere from 2 days to 2 weeks, depending on the class format. Participants will have hands-on exercises with products, simulators and equipment. Our state-of-the-art training facility is headquartered in Maumee, OH (Toledo area) and can accommodate all training offerings. Students will be required to attend and participate in all sessions, demonstrate proficiency in the course topics, and successfully complete a written exam with a score of 70% or higher in order to receive a certificate of completion. Students who do not take the exam, or who score lower than a 70%, will not receive a certificate.

Please contact hydraulicstraining@danfoss.com for the most up-to-date schedules. Class schedules are subject to change.



AUTONOMY

Autonomy Training Program

Autonomous Control Library

The Autonomy Training Program courses include a series of online modules, designed to help our partners learn more about our company and products. Each course is an interactive video and will take about 20-30 minutes to complete. To receive credit for the course, users must pass a quiz at the end of the module with a score of 80% or higher. Subtitles in English are available on request.

Role	Level	PPP Required?	Course ID	Course Title
Inside Sales	100	Yes	AV101	Introduction to Autonomy Level and Layers
			AV102	Introduction to the Autonomous Control Library
			AV103	Introduction to the XM100
	200	Yes	AV201	Value Propositions and Applications
			AV202	Introduction to the Perception Layer and Danfoss Partners
			AV203	Types of Perception Sensors
			AV204	Types of Positioning Sensors

**Must be logged in to your [Danfoss Learning](#) account to register*



CONTROLS

Controls Training Program

Controls

The Controls Training Program courses include a series of online modules, designed to help our partners learn more about our company and products. Each course is an interactive video and will take about 20-30 minutes to complete. To receive credit for the course, users must pass a quiz at the end of the module with a score of 80% or higher. Subtitles in English are available on request.

Role	Level	PPP Required?	Course ID	Course Title
CONNECT AND CONTROL SOLUTIONS (CCS)				
Inside Sales	100	Yes	CCS101	Introduction to Connect and Control Solutions Business Unit
			CCS102	Introduction to CCS Product Overview
			CCS103	Controllers and I/O Modules
			CCS104	Position Controls and Sensors
			CCS105	Displays
			CCS106	Joysticks
			CCS109	Legacy Products
Outside Sales	300	Yes	ICS301	Product Fundamentals - Cartridge Valves and HICs
			CCS301	Product Fundamentals - Connect and Control Solutions
			RCT301	Product Fundamentals - Radio Remote Controls
Software Programmers	400	Yes	RCT401	Advanced Product Fundamentals - Radio Remote Controls
	100	Yes	CCS108	PLUS+1® GUIDE and Service Tool
			TBD	PLUS+1® GUIDE Yearly Update (required for renewing points)
	300	Yes	PO301	PLUS+1® GUIDE Fundamentals
	400	Yes	PO401	PLUS+1® GUIDE Advanced
		No	PO403	PLUS+1® GUIDE Functional Safety
	500	No		PLUS+1® GUIDE Expert
OPEN CIRCUIT PUMPS (OCP)				
Inside Sales	100	Yes	OCP101	Introduction to Open Circuit Pumps Business Unit
			OCP102	Intro to Open Circuit Pumps Controls and Applications
			OCP104	Series 45 ETL Tuning Overview

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Controls Training Program

Controls

The Controls Training Program courses include a series of online modules, designed to help our partners learn more about our company and products. Each course is an interactive video and will take about 20-30 minutes to complete. To receive credit for the course, users must pass a quiz at the end of the module with a score of 80% or higher. Subtitles in English are available on request.

Role	Level	PPP Required?	Course ID	Course Title
OPEN CIRCUIT PUMPS (OCP) (continued)				
Inside Sales	100	Yes	OCP105	Introduction to Series 45
			OCP106	Overview of Series 45 Controls
	200	Yes	OCP203	Series 45 ETL Overview
SPOOL VALVE SOLUTIONS (SVS)				
Inside Sales	100		SVS101	Introduction to SVS Business Unit
			SVS102	Introduction to SVS Product Overview
			SVS103	PVG 32 Specification Sheet
			SVS104	PVG 16 - 32 - 120 Basics
			SVS106	PVG 100 Basics
			SVS107	PVE Control Basics
			SVS108	Introduction to CAN bus
Outside Sales	300		SVS301	Product Fundamentals - SVS
	400		SVS403	System Fundamentals - PVG Digital Acutators J1939
			SVS404	System Fundamentals - PVG Digital Acutators CANOpen

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Controls Training Program

PLUS+1[®] GUIDE Fundamentals

Level 300 (PO301)

Learning Goals:

This training focuses on best practices for using the basic features of PLUS+1[®] GUIDE and Service Tool.

Upon completion of the training, participants will be able to write, compile, and run a simple application before the end of the day. The first two days will concentrate on the basic use and navigation of the programming environment.

Topics Covered:

- Introduction to PLUS+1[®] GUIDE
- Creating a basic page/basic page interface editor
- Basic application: pressure alarm
- PLUS+1[®] Update Center basics
- Function Block Libraries and compliance blocks
- PLUS+1[®] Service Tool basics
- Basic application: dual path application
- CAN in PLUS+1[®] GUIDE
- IEC 61131-3 introduction
- Display programming
- Tips and tricks

Class Offerings:

[Check Danfoss Learning for schedule and to register](#)

Ordering Information:

<u>Part #</u>	<u>Training type</u>
10101469	Face-to-face (in-person)
11265008	Webinar (online)
11265020	Self-study (self-paced)

**Must be logged in to your [Danfoss Learning](#) account to register*



Participants

Open to anyone who may need to understand, evaluate or use PLUS+1 GUIDE[®], Service Tool, and/or Update Center



Pre-requisites

None



Location

Check Danfoss Learning



Duration

Check Danfoss Learning



Tuition

Contact your Danfoss Sales Representative

<http://plus1helpdesk.danfoss.com>

Controls Training Program

PLUS+1® GUIDE Advanced

Level 400 (PO401)

Learning Goals:

This training focuses on best practices for using more of the advanced features of PLUS+1® GUIDE and Service Tool. The training will also allow the participant to learn about and discuss the advanced features of PLUS+1® Software.

Upon completion of the training, participants will be able to identify and use some of the more advanced features in PLUS+1® Software.

Topics Covered:

- Basics refresher
- Arrays and repeat units
- Read-only parameters
- CAN communication in PLUS+1®
- Application logging
- Intellectual property protection
- IEC 61131-3 programming language
- Display programming
- Service Tool - advanced screens
- Tips and tricks

Class Offerings:

[Check Danfoss Learning for schedule and to register](#)

Ordering Information:

<u>Part #</u>	<u>Training type</u>
11076423	Face-to-face (in-person)
11265009	Webinar (online)
11265021	Self-study (self-paced)



Participants

Open to anyone who may need to understand, evaluate or use or teach others to use PLUS+1® Software at a working level of understanding



Pre-requisites

PLUS+1® GUIDE Fundamentals



Location

Check Danfoss Learning



Duration

Check Danfoss Learning



Tuition

Contact your Danfoss Sales Representative

<http://plus1helpdesk.danfoss.com>

**Must be logged in to your [Danfoss Learning](#) account to register*

Controls Training Program

PLUS+1® GUIDE Functional Safety

Level 400 (PO403)

Learning Goals:

This training focuses on best practices for using the PLUS+1® GUIDE and Service Tool in functional safety software. In addition, participants will learn how to use the programming equipment in GUIDE for quality assurance and functional safety.

Upon completion of the training, participants will be able to identify and explain functional safety features in PLUS+1® software and implement those features into a basic application.

Topics Covered:

- V model and PLUS+1® GUIDE
- Safety toolbox in PLUS+1® GUIDE
- Version control
- Traceability
- Test tool and debugger
- SIL2 compilation
- PLUS+1® programmable safety controllers, SC and XL controllers
- Best practice for functional safety programs on PLUS+1® controllers
- PLUS+1® GUIDE blocks with safety functions
- CAN safety functions in PLUS+1® GUIDE, J1939-76.1

Class Offerings:

[Check Danfoss Learning for schedule and to register](#)

Ordering Information:

Part #	Training type
11133505	Face-to-face (in-person)
11265011	Webinar (online)

**Must be logged in to your [Danfoss Learning](#) account to register*



Participants

Open to anyone who may need to understand, evaluate or use or teach others to use the functional safety features in PLUS+1® Software



Pre-requisites

PLUS+1® GUIDE Fundamentals and basic functional safety training in some of the major safety standards like IEC 61508



Location

Check Danfoss Learning



Duration

Check Danfoss Learning



Tuition

Contact your Danfoss Sales Representative

<http://plus1helpdesk.danfoss.com>

Controls Training Program

PLUS+1[®] GUIDE Expert

Level 500

Learning Goals:

This training focuses on providing expert skills to utilize PLUS+1[®] software for exactly your needs. Anyone who has taken all three other PLUS+1[®] trainings are eligible to register for this class and learn how to master the more advanced and newest features in the PLUS+1[®] software toolbelt.

Topics Covered:

- Basics refresher
- Newest PLUS+1[®] software features
- Custom topics
- Discuss participant's personal PLUS+1[®] software projects
- Hands-on GUIDE coding
- Value selling GUIDE and service tool
- Tips and tricks

Class Offerings:

[Check Danfoss Learning for schedule and to register](#)

Ordering Information:

Part #	Training type
11265013	Face-to-face (in-person)



Participants

Open to anyone who may need to understand, evaluate or use or teach others to use PLUS+1[®] Software at an expert level of understanding



Pre-requisites

PLUS+1[®] GUIDE Fundamentals
PLUS+1[®] GUIDE Advanced
PLUS+1[®] GUIDE Functional Safety



Location

Check Danfoss Learning



Duration

Check Danfoss Learning



Tuition

Contact your Danfoss Sales Representative

<http://plus1helpdesk.danfoss.com>

**Must be logged in to your [Danfoss Learning](#) account to register*

Controls Training Program

How to Register for PLUS+1® Software Training

1. Use the link [PLUS+1 Software - Learn how to improve your applications](https://www.danfoss.com/en/products/dps/software/software-and-tools/plus1-software/#tab-training) and click Browse our PLUS+1® training catalog, to see when the next available PLUS+1® training is scheduled!
(<https://www.danfoss.com/en/products/dps/software/software-and-tools/plus1-software/#tab-training>)

2a. For face-to-face trainings, be sure to check the location before completing enrollment.

Available classes (2) |  Filters

30-NOV-2021 - 02-DEC-2021

Session Details: 30-NOV-2021 | 8:00 AM - 4:00 PM (CST) +2 Others

English | Face-to-Face | Class ID: 0000017343

 **Minneapolis**

Total duration: 24:00 Hrs | [Check cancellation policy](#)

0 seats available | 14 Waitlist available

Invalid
J SEK

2b. For on-line (webinar) trainings, be sure to check the time zone before completing enrollment.

18-OCT-2021 - 21-OCT-2021

Session Details: 18-OCT-2021 | 1:30 PM - 4:00 PM (SGT) +3 Others

English | Face-to-Face | Class ID: 0000018621

 **On-line GMT+8** **China/APAC time zone**

Total duration: 10:00 Hrs | [Check cancellation policy](#)

12 seats available | 100 Waitlist available

Invalid
J SEK

2c. For self-study, **do not** register (enroll) for the training, see 5.

3. Note the start date of the training.

4. When you register for the training, you will need to add your Danfoss credentials to access your MyDanfoss account.

5. Contact your Danfoss sales representative, or use the same channels that you purchase other Danfoss products to place an order, and submit a PO for the training.

6. Part number and start date for the training will be needed for the order.

7. The PLUS+1® GUIDE trainer will contact you with information needed for the training when the order is visible in Danfoss business system.

As an alternative to step 1, you can...

Alt 1a. Log in to Danfoss Learning from Partnerlink.

Alt 1b. Log in to Danfoss Learning from <http://learning.Danfoss.com> with your DIP account (or create a new account and log in).

Alt 2. Under the POWER SOLUTIONS tab, choose software and then PLUS+1® SOFTWARE.

Controls Training Program

Product Fundamentals - Cartridge Valves and HICs

Level 300 (ICS301)

Learning Goals:

The course provides basics about function, specification and design of hydraulic cartridge valves and hydraulic integrated circuits (HICs). It includes application examples and hands-on training with the configuration tools used in the daily technical sales activity. Hints of market positioning and value selling are also provided.

Upon completion of the training, participants will be expected to:

- Understand the value proposition of the product
- Understand the cartridge valve concept and have a basic knowledge of the product range
- Understand the HIC concept and be aware of the main features and configuration guidelines
- Be able to configure, quote and design an HIC using EasyManifold 3D Know the MVB10 program and be able to configure a modular system
- Be familiar with the pricing tools
- Have a good understanding of market positioning and typical target applications
- Have a good understanding of the workflow involved in developing a new HIC
- Be able to identify business opportunities for cartridges and HICs

Topics Covered:

- Products: cartridge valves and hydraulic integrated circuits
- Introduction to BU ICS
- Cartridge valve product range overview
- HICs: concept, potential, configuration and design fundamentals
- EasyManifold 3D
- Modular systems: MVB10

Class Offerings:

To be determined

**Must be logged in to your [Danfoss Learning](#) account to register*



Participants

Open to Sales Representatives and technical support engineers



Pre-requisites

None



Location

Virtual classroom



Duration

6 hours



Tuition

€180

Controls Training Program

Product Fundamentals - Connect and Control Solutions

Level 300 (CCS301)

Learning Goals:

The course provides participants with knowledge of mobile electronic hardware products and features. The theoretical- and practical- oriented training concept provides various opportunities to learn about the products and related PLUS+1® concept.

To equip our distribution partners with the product knowledge and tools necessary to recognize sales opportunities and successfully apply Danfoss electronic component products.

- Learn about company history, current structure and future direction. Network with Danfoss distribution support teams and other distributor partners
- Tour Nordborg Application Development Center and manufacturing facility

Topics Covered:

Discussions of what products and services we have to offer, typical applications, product specifications, options, design features and benefits for each of the following:

- Microcontrollers
- Displays
- Joysticks
- Sensors
- HMI products
- Remote controls

In-depth discussions will be led by product application engineers on topics such as:

- System specification
- System integration
- Sub-system application
- CAN communication
- Software tools
- Sales tools
- Key application solutions

Class Offerings:

To be determined

**Must be logged in to your [Danfoss Learning](#) account to register*



Participants

Open to Sales Representatives and Technical Support Engineers



Pre-requisites

CCS102, CCS103, CCS104, CCS105, CCS106, CCS108



Location

Virtual classroom



Duration

6 hours



Tuition

€180

Controls Training Program

Product Fundamentals - Open Circuit

Level 300

Learning Goals:

The course provides basics about design and function of the D1P and S45 open circuit piston pumps. It covers the function of the D1P pump, including examples of applications and system layouts. It also gives a background to the history of development and market positioning, including value selling direction.

On completion of the training course, participants are expected to:

- Understand the value proposition of the product.
- Understand the market entry and positioning strategy.
- Understand the principle of open circuit systems.
- Know the components and functions of the D1P and S45.
- Have a good understanding about open circuit applications and systems.
- Be able to identify business opportunities for open circuit systems.
- Design and prepare proposals for needed pump functions to accomplish system needs.

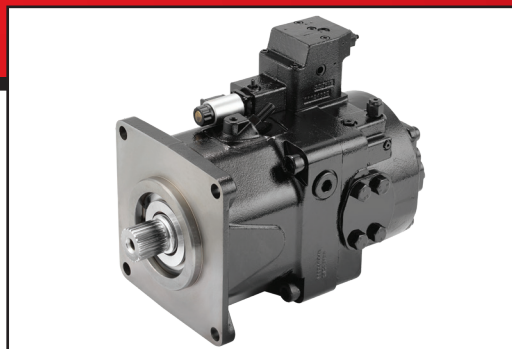
Topics Covered:

- Products: S45 (medium power open circuit pumps, displacement of 25cc to 147cc), D1P (high power open circuit pumps, displacement of 130cc to 260cc)
- Value proposition
- Market and market entry
- Open circuit system design
- Basic design and working principle of D1P and S45 including different control functions
- Basics of open circuit motors
- Base Model Program
- Application demonstration
- Exercises and group work
- Practical understanding of pump design

Class Offerings:

To be determined

**Must be logged in to your [Danfoss Learning](#) account to register*



Participants

Open to Sales Representatives and Technical Support Engineers



Pre-requisites

None



Location

Nordborg, Denmark



Duration

8 hours



Tuition

€240

Controls Training Program

Product Fundamentals - Radio Remote Controls

Level 300 (RCT301)

Learning Goals:

The course provides participants with knowledge of radio remote control systems to be applied in the mobile sector.

The practical-oriented training concept with hands-on activities provides various opportunities to learn about these new CCS products.

To equip our distribution partners with the product knowledge and tools necessary to recognize sales opportunities and successfully apply Danfoss remote control products.

- Learn about company history, current structure and future direction.
- Learn about product portfolio

Topics Covered:

- Products: transmitters, receivers and configuration tool
- There will be discussions of what products and services we have to offer, typical applications, product specifications, options, design features and benefits for each of the following:
- Console box transmitters
- Handheld transmitters
- Receivers
- Additional options
- Product configurator
- Troubleshooting
- Exercises and group work

Class Offerings:

To be determined

**Must be logged in to your [Danfoss Learning](#) account to register*



Participants

Open to Sales Representatives and Technical Support Engineers



Pre-requisites

None



Location

Virtual classroom



Duration

12 hours



Tuition

€360

Controls Training Program

Advanced Product Fundamentals - Radio Remote Controls

Level 400 (RCT401)

Learning Goals:

The course provides participants with knowledge of radio remote control systems to be applied in the mobile sector.

The practical-oriented training concept with hands-on activities provides various opportunities to learn about these new CCS products.

To equip our distribution partners with the product knowledge and tools necessary to recognize sales opportunities and successfully apply Danfoss remote control products.

- Learn about company history, current structure and future direction.
- Learn about product portfolio

Topics Covered:

- Products: transmitters, receivers and configuration tool
- There will be discussions of what products and services we have to offer, typical applications, product specifications, options, design features and benefits for each of the following:
 - Console box transmitters
 - Handheld transmitters
 - Receivers
 - Additional options
 - Product configurator
 - Troubleshooting
 - Exercises and group work

Class Offerings:

To be determined

**Must be logged in to your [Danfoss Learning](#) account to register*



Participants

Open to Sales Representatives and Technical Support Engineers



Pre-requisites

RCT301



Location

On-site (San Sebastian, Spain)



Duration

3 days (20 hours)



Tuition

€645

Controls Training Program

Product Fundamentals - SVS

Level 300 (SVS301)

Learning Goals:

Participants of this basic training receive product knowledge about design and function of load independent proportional valves products. In addition, the course participant receives insights into our valves production facility in Nordborg, Denmark.

On completion of the training course participants are expected to:

- Understand principle of PVG valves
- Know the components and the functions of all products
- Increase knowledge related to PVG applications
- Be able to identify business opportunities for PVG applications
- Design and prepare a specification for PVG valves
- Know our production facilities in Nordborg, Denmark

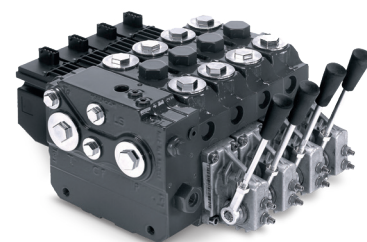
Topics Covered:

- Products: PVG 16, PVG 32, PVG 100, PVG 120, PVE
- Basic design and working principles of our steering products
- Component sizing
- Hands-on exercises in small groups
- Plant tour

Class Offerings:

To be determined

**Must be logged in to your [Danfoss Learning](#) account to register*



Participants

Open to Sales Representatives and Technical Support Engineers



Pre-requisites

SVS102, SVS103, SVS104, SVS106, SVS107



Location

Virtual classroom



Duration

6 hours



Tuition

€180

Controls Training Program

System Fundamentals - Open Circuit Products and Systems

Level 400

Learning Goals:

The course provides basics about design and function of the D1P and S45 open circuit piston pumps. It covers the function of the D1P pump, including examples of applications and system layouts. It also gives a background to the history of development and market positioning, including value selling direction.

On completion of the training course participants are expected to:

- Understand the value proposition of the product
- Understand the market entry and positioning strategy
- Understand the principle of open circuit systems
- Know the components and functions of the D1P and S45
- Have a good understanding about open circuit applications and systems
- Be able to identify business opportunities for open circuit systems
- Design and prepare proposals for needed pump functions to accomplish system needs.

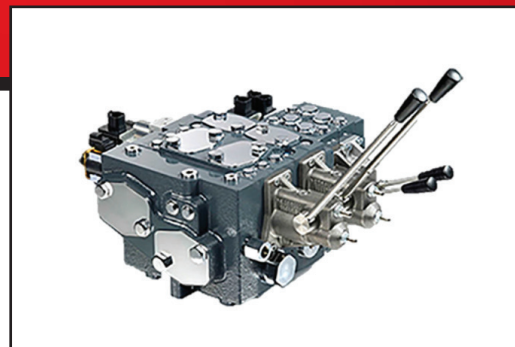
Topics Covered:

- Products: S45 (medium power open circuit pumps, displacement of 25cc to 147cc), D1P (high power open circuit pumps, displacement of 130cc to 260cc)
- Value proposition
- Market and market entry
- Open circuit system design
- Basic design and working principle of D1P and S45 including different control functions
- Basics of open circuit motors

Class Offerings:

To be determined

**Must be logged in to your [Danfoss Learning](#) account to register*



Participants

Open to Sales Representatives and Technical Support Engineers



Pre-requisites

None



Location

Nordborg, Denmark



Duration

28 hours



Tuition

€855

Controls Training Program

System Fundamentals - PVG Digital Actuators J1939

Level 400 (SVS403)

Learning Goals:

This course introduces digital CAN components from the SVS portfolio. These include our J1939/ISObus variants Series 7 and Series 5 (CI, CC and CC4). It supplies detailed information regarding the characteristics, functionalities, features and benefits. Furthermore, the training provides participants with fundamental knowledge of how to handle a digital PVE in a CAN system.

On completion of the training course, participants are expected to:

- Be able to evaluate when usage of CAN technology makes sense in a hydraulic application.
- Have an overview of digital actuators
- Know the features of the digital actuators
- Be able to specify a digital actuator
- Know how to implement the digital actuators in a system
- Be able to troubleshoot on digital actuators
- Configure the digital actuators using PLUS+1® Service Tool

Topics Covered:

- Why go for a digital solution
- Product overview
- J1939/ISObus overview
- Parameterization and Diagnostics
- Service Tool
- CAN in practice - hands-on real-life application

Class Offerings:

To be determined

**Must be logged in to your [Danfoss Learning](#) account to register*



Participants

Open to Sales Representatives and Technical Support Engineers



Pre-requisites

PVG108



Location

Nordborg, Denmark



Duration

16 hours



Tuition

€480

Controls Training Program

System Fundamentals - PVG Digital Actuators CANOpen

Level 400 (SVS404)

Learning Goals:

This course introduces digital CAN components from the SVS portfolio. These include our J1939/ISObus variants Series 7 and Series 5 (CI, CC and CC4). It supplies detailed information regarding the characteristics, functionalities, features and benefits. Furthermore, the training provides participants with fundamental knowledge of how to handle a digital PVE in a CAN system.

On completion of the training course, participants are expected to:

- Be able to evaluate when usage of CAN technology makes sense in a hydraulic application.
- Have an overview of digital actuators
- Know the features of the digital actuators
- Be able to specify a digital actuator
- Know how to implement the digital actuators in a system
- Be able to troubleshoot on digital actuators
- Configure the digital actuators using PLUS+1® Service Tool

Topics Covered:

- Why go for a digital solution
- Product overview
- CANOpen overview
- Parameterization and Diagnostics
- Service Tool
- CAN in practice - hands-on real-life application

Class Offerings:

To be determined

**Must be logged in to your [Danfoss Learning](#) account to register*



Participants

Open to Sales Representatives and Technical Support Engineers



Pre-requisites

PVG108



Location

Nordborg, Denmark



Duration

16 hours



Tuition

€480



EDITRON

Editron Training Program

Editron

The Editron Training Program courses include a series of online modules, designed to help our partners learn more about our company and products. Each course is an interactive video and will take about 20-30 minutes to complete. To receive credit for the course, users must pass a quiz at the end of the module with a score of 80% or higher. Subtitles in English are available on request.

Role	Level	PPP Required?	Course ID	Course Title
EDITRON				
Inside Sales	100	Yes	EDI102	Basics of Electrical Engineering
			EDI103	Introduction to Editron Products
			EDI104	Hybrid and Electric Systems
			EDI105	Power Electronics In-Depth
			EDI106	Electric Machines In-Depth

**Must be logged in to your [Danfoss Learning](#) account to register*



FLUID CONVEYANCE

Fluid Conveyance Training Program

Fluid Conveyance

The Fluid Conveyance Training Program courses have been restructured for 2024 and are now being offered by business unit. Each level 200/300 course is instructor-led, either virtually or on-site. Users must pass an exam at the end of the Level 200/300 courses with a score of 70% or higher in order to receive a certification.

Role	Level	PPP Required?	Course ID	Course Title
FLUID CONVEYANCE				
Inside Sales/ Technical Reps	100	No	FC116	Fluid Conveyance Overview Podcast
				The Anatomy of a Hydraulic Hose
	200	Yes	FC108	Fluid Conveyance Product Overview
			FC216	Aeroquip Fluid Conveying Rubber Hydraulic Hose and Fittings (RHHF) (Authorized Aeroquip Distributors only)
		Yes	FC218	Fuel, A/C, Thermoplastic & Specialty (FACTS)
			FC217	Connectors
Outside Sales/ Technical Reps	300	Yes	FC303	Hose Routing, Installation & Failure Analysis

*Must be logged in to your [Danfoss Learning](#) account to register

2024 COURSE TITLE	REPLACES	FULFILLED BY: (completed 1/1/18-12/31/23)
Aeroquip Fluid Conveying Rubber Hydraulic Hose and Fittings (RHHF)	Aeroquip Fluid Conveying Products School (Level 200)	<ul style="list-style-type: none"> Aeroquip Fluid Conveying Products School - Level 200 Fluid Conveying Products School - Level 200
Fuel, A/C, Thermoplastic & Specialty (FACTS)	Aeroquip/ Weatherhead Fluid Conveying Products School (Level 200)	<ul style="list-style-type: none"> Aeroquip Fluid Conveying Products School - Level 200 Weatherhead Fluid Conveying Products School - Level 200 Fluid Conveying Products School - Level 200
Connectors	Aeroquip/ Weatherhead Fluid Conveying Products School (Level 200)	<ul style="list-style-type: none"> Aeroquip Fluid Conveying Products School - Level 200 Weatherhead Fluid Conveying Products School - Level 200 Fluid Conveying Products School - Level 200
Hose Routing, Installation & Failure Analysis (RIFA)	Fluid Conveying Products School (Level 300-400)	<ul style="list-style-type: none"> Aeroquip/Weatherhead Fluid Conveying Products School (Level 300-400) Fluid Conveying Products School - Level 300 Fluid Conveying Products School - Level 400

Fluid Conveyance Training Program

Aeroquip Fluid Conveying Rubber Hydraulic Hose and Fittings (RHHF)

Level 200 (FC216)

Learning Goals:

This 2-day, 12-hour course utilizes a Virtual Classroom via live remote connection with an instructor. Course attendance could be satisfied at the workplace, in a group setting, or accomplished via a home office.

This course incorporates training on the Hydraulic Hose and Fitting Core for Aeroquip brand fluid conveying products and associated support equipment. Focus areas include core product overviews, product literature navigation, assembly equipment, and proper hydraulic hose assembly.

Topics Covered:

- Rubber hydraulics product overview
- Hose selection chart
- S-T-A-M-P-E-D and hose terminology
- Glossary of terms
- Core premium and core standard hoses
- Braided and spiral hose fittings
- Hose accessories
- Assembly machines and tooling

Class Offerings:

To be determined

**Must be logged in to your [Danfoss Learning](#) account to register*



Participants

Open to Danfoss employees and distributors authorized to sell Aeroquip product line



Pre-requisites

Fluid Conveyance Product Overview (Level 100)



Location

Virtual Classroom



Duration

2 days, 6 hours/day



Tuition

€360

Fluid Conveyance Training Program

Fuel, A/C, Thermoplastic and Specialty (FACTS)

Level 200 (FC218)

Learning Goals:

This 1-day, 6-hour course utilizes a Virtual Classroom and is delivered electronically. Course attendance could be satisfied at the workplace, in a group setting, or accomplished via a home office.

This course is open to Danfoss employees and distributors authorized to sell the Danfoss Fluid Conveyance product line. It incorporates training on Thermoplastic and PTFE products, Air Conditioning, Airbrake and Danfoss Fuel & Engine.

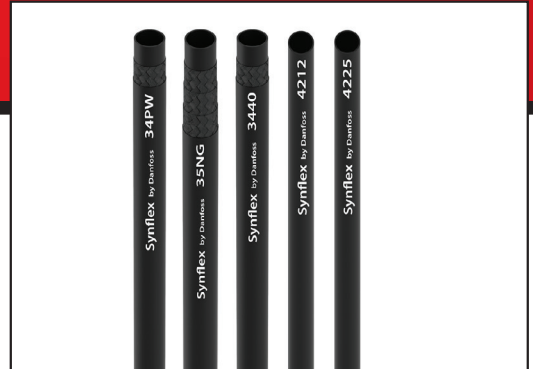
Topics Covered:

- Synflex Optimum hose and fittings
- PTFE hose and fittings
- A/C and refrigeration hose and fittings
- Socketless hose and fittings
- Airbrake hose and fittings
- Fuel and engine hose and fittings

Class Offerings:

To be determined

**Must be logged in to your [Danfoss Learning](#) account to register*



Participants

Open to Danfoss employees and distributors authorized to sell Danfoss Fluid Conveyance product line



Pre-requisites

Fluid Conveyance Product Overview (Level 100)

Level 200 (RHHF)



Location

Virtual Classroom



Duration

1 day, 6 hours/day



Tuition

€180

Fluid Conveyance Training Program

Connectors

Level 200 (FC217)

Learning Goals:

This 3-day, 15-hour course utilizes a Virtual Classroom and is delivered electronically. Course attendance could be satisfied at the workplace, in a group setting, or accomplished via a home office.

This course is open to Danfoss employees and distributors authorized to sell the Danfoss Fluid Conveyance product line. It incorporates training on thread identification of fluid connectors, steel adapters, brass connectors, Quick Disconnect couplings, swivels, Flexmaster, FLOCS, and tube fittings.

Topics Covered:

- Threaded connection identification
- Steel adapters
- Quick Disconnect couplings
- Brass products
- FLOCS
- Flexmaster
- Swivels
- Tube connections

Class Offerings:

To be determined

**Must be logged in to your [Danfoss Learning](#) account to register*



Participants

Open to Danfoss employees and distributors authorized to sell Danfoss Fluid Conveyance product line



Pre-requisites

Fluid Conveyance Product Overview (Level 100)

Level 200 (RHFF)



Location

Virtual Classroom



Duration

3 days, 5 hours/day



Tuition

€450

Fluid Conveyance Training Program

Hose Routing, Installation & Failure Analysis

Level 300 (FC303)

Learning Goals:

This 1-day, 6-hour course utilizes a Virtual Classroom and is delivered electronically. Course attendance could be satisfied at the workplace, in a group setting, or accomplished via a home office.

Topics Covered:

- Tube bending and installation
- Lifesaver brazing techniques
- Tightening threaded connectors
- Hose routing and installation
- Analyzing hose failures
- Hose routing exercise

Class Offerings:

To be determined

**Must be logged in to your [Danfoss Learning](#) account to register*



Participants

Open to Danfoss employees and distributors authorized to sell Danfoss Fluid Conveyance product line



Pre-requisites

Fluid Conveyance Product Overview (Level 100)

Level 200 (RHHF)



Location

Virtual Classroom



Duration

1 day, 6 hours/day



Tuition

€180



HYDROSTATICS

Hydrostatics Training Program

Hydrostatics

The Hydrostatics Training Program Courses are a series of online modules, designed to help our partners learn more about our company and products. Each course is an interactive video and will take about 20-30 minutes to complete. To receive credit for the course, users must pass a quiz at the end of the module with a score of 80% or higher. Subtitles in English are available on request.

Role	Level	PPP Required?	Course ID	Course Title
HYDROSTATICS				
Inside Sales	100	Yes	HP103	H1 Pumps
			HP104	Series 90 Pumps and Motors
			HP105	H1B Motors
			HP106	Introduction to High Power Base Model Programs
			MPCC102	Introduction to Direct Displacement Pumps
			MPCC103	Introduction to Medium Power Servo Pumps
			MPCC104	Introduction to Medium Power Piston Motors
			MPCC105	Introduction to MP1 Servo Pumps
			MPCC106	Introduction to MP1 Motors
			MPOC103	Medium Power Legacy Products
Inside Sales	200	Yes	HY202	Intro to Tools (P Cubed, Kit Life)
			HY204	Zero Degree Motors
			HP201	Bent Axis Motor Controls - Proportional
			HP202	Bent Axis Motor Controls - 2 Position
			HP203	Bent Axis Motor Controls - Pressure Compensated

**Must be logged in to your [Danfoss Learning](#) account to register*

Hydrostatics Training Program

Hydrostatics

The Hydrostatics Training Program Courses are a series of online modules, designed to help our partners learn more about our company and products. Each course is an interactive video and will take about 20-30 minutes to complete. To receive credit for the course, users must pass a quiz at the end of the module with a score of 80% or higher. Subtitles in English are available on request.

Role	Level	PPP Required?	Course ID	Course Title
HYDROSTATICS				
Outside Sales	300	Yes	HP301	Product Fundamentals - Hydrostatics Closed Circuit
			HP302	Product Fundamentals - Hydrostatic High Power Motors with Valves
			MP301	Product Fundamentals - Hydrostatics Medium Power
	400	Yes	HP403	Advanced Product Fundamentals - Hydrostatics Closed Circuit
			MP401	Advanced Product Fundamentals - Hydrostatics Medium Power
			HP401	System Fundamentals - Closed Circuit Propel
			HP402	System Solutions Fundamentals - Electronic Controlled Propel Systems

**Must be logged in to your [Danfoss Learning](#) account to register*

Hydrostatics Training Program

Product Fundamentals - Hydrostatics High Power Closed Circuit

Level 300 (HP301)

Learning Goals:

This course provides basics about design and function of axial piston products and their control options. It covers control closed circuit systems design recommendations and sizing tools. In addition, course participants receive insights into the production in Neumünster, Germany.

Upon completion of this course, students will:

- Understand the principles of hydrostatic propel systems
- Know the components and the functions of axial piston units
- Have a good knowledge of propel system applications
- Be able to identify business opportunities for propel systems
- Design and prepare a proposal for a propel system
- Know our production facility in Neumünster, Germany

Topics Covered:

- Products: S90 pumps and motors, H1 pumps and motors
- Basic design and working principles of axial piston pumps and motors
- Closed circuit system design
- Component sizing
- Exercises and group work
- Production tour
- H1 base model program

Class Offerings:

To be determined

**Must be logged in to your [Danfoss Learning](#) account to register*



Participants

Open to Sales Representatives
and Technical Support
Engineers



Pre-requisites

HP102, HP103, HP104, HP105,
HP106



Location

Virtual Classroom



Duration

9 hours



Tuition

€270

Hydrostatics Training Program

Product Fundamentals - Hydrostatic High Power Motors with Valves

Level 300 (HP302)

Learning Goals:

This course provides basics about design and function of various valves in conjunction with high power motors. It covers open circuit system design recommendation for propel and/or work function with rotary functions such as winches.

Upon completion of this course, students will:

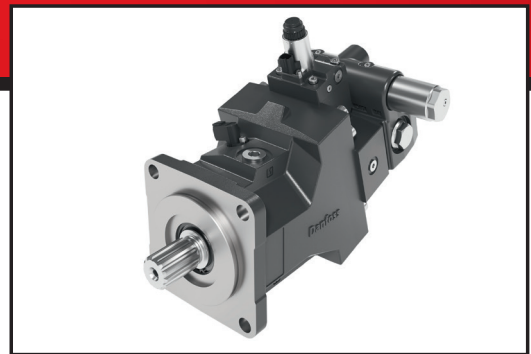
- Understand the principles of various valves
- Know the components and the functions of each valve
- Have a good knowledge of motor application in open circuit
- Be able to identify business opportunities for brake valves for propel, winches, shredders and cranes
- Design and prepare a proposal for an open circuit motor system

Topics Covered:

- Products: counterbalance Valve (CBV), Full Flow High Pressure Relief Valve (FHPRV), Loadholding Valve (LHV) in correlation to our H1 motors
- Basic design and working principles of the valves
- Open circuit system design
- Exercises and group work

Class Offerings:

To be determined



Participants

Open to Sales Representatives and Technical Support Engineers



Pre-requisites

MTR102, MTR103, MTR104



Location

Virtual Classroom



Duration

9 hours



Tuition

€270

**Must be logged in to your [Danfoss Learning](#) account to register*

Hydrostatics Training Program

Product Fundamentals - Hydrostatics

Medium Power

Level 300 (MP301)

Learning Goals:

This course provides basics about design and function of medium power axial products and their use in propel applications. It covers control options, system designs, and sizing tools for the different applications.

Upon completion of this course, students will:

- Understand the principles of medium power propel systems
- Know the components and the functions of axial piston medium power units
- Be able to identify business opportunities for medium power propel systems
- Design and prepare a proposal for different systems
- ADC tour and machine demonstration

Topics Covered:

- Products: MP1 pump, S40 pumps and motors, LPV, S42, and DDC pumps, K/L and RDM motors, LDU transmissions, MP1M
- Basic design and working principles of axial piston pumps and motors
- Closed circuit system design
- Component sizing
- Exercises and group work
- Hands-on training

Class Offerings:

To be determined



Participants

Open to Sales Representatives and Technical Support Engineers



Pre-requisites

MPCC102, MPCC103, MPCC104, MPCC105



Location

Virtual Classroom



Duration

To be determined



Tuition

€930

**Must be logged in to your [Danfoss Learning](#) account to register*

Hydrostatics Training Program

Advanced Product Fundamentals - Hydrostatics High Power Closed Circuit

Level 400 (HP403)

Learning Goals:

This course provides basics about design and function of hydrostatic high-power units and their control options.

Upon completion of this course, students will:

- Know the functions of hydrostatic high-power units
- Understand the principles of hydrostatic high-power units and its controls
- Be able to find basic information, tools and right contacts

Topics Covered:

- Products: S90 pumps and motors, H1 pumps and motors (fixed and variable)
- Hydrostatic closed circuit principal explanation and animations
- Basic design and working principles of hydrostatic high-power pumps and motors
- Assembly and disassembly of hydrostatic high-power units by service video
- Examples of applications and subsystem solutions
- Introduction of additional available tools, videos, documents and right contacts
- End of day question and answer sessions

Class Offerings:

To be determined

**Must be logged in to your [Danfoss Learning](#) account to register*



Participants

Open to Sales Representatives and Technical Support Engineers



Pre-requisites

HP102, HP103, HP104, HP105, HP106



Location

Virtual classroom



Duration

31 hours



Tuition

€930

Hydrostatics Training Program

Advanced Product Fundamentals - Hydrostatics Medium Power

Level 400 (MP401)

Learning Goals:

This course provides basics about hydrostatic closed circuit propel system principle, design and function of hydrostatic medium power products and their control options.

Upon completion of this course, students will:

- Know the functions of hydrostatic medium power units
- Understand the principles of hydrostatic medium power units and its controls
- Be able to find basic information, tools and right contacts

Topics Covered:

- Products: direct displacement pumps with focus on DDC pump, servo pumps with focus to MP1 pump, fixed motors with focus to MP1M and variable motors with focus to L/K motor. In general, will be introduced as series related to the medium power closed circuit like S40 S42 MP1 series BDU LDU
- Hydrostatic closed circuit principal explanation and animations
- Basic design and working principles of hydrostatic medium power pumps and motors
- Examples of applications and subsystem solutions
- Explanation of load life, lifetime L20 and duty circle (what it is and how to deal with it)
- Introduction of additional available tools, videos, documents and right contacts
- End of day question and answer sessions

Class Offerings:

To be determined



Participants

Open to Sales Representatives and Technical Support Engineers



Pre-requisites

HPOC102, MPOC102, MPOC104



Location

Virtual classroom



Duration

31 hours



Tuition

€930

**Must be logged in to your [Danfoss Learning](#) account to register*

Hydrostatics Training Program

System Fundamentals - Closed Circuit Propel

Level 400 (HP401)

Learning Goals:

The course provides basics about design and function of propel systems. It covers closed circuit systems, based on a sample customer request: understanding the functionality of all parts in a closed loop hydrostatic system and how they interact. A fully equipped test bench with pump and motor is used to simulate and show the system performance.

Upon completion of this course, students will:

- Have a comprehensive understanding of the hydraulic functionalities in a basic closed loop hydrostatic system
- Be able to specify a hydrostatic propel system according to system specification
- Know how to check the installation and where to measure the relevant system pressures
- Know in detail how the main functions of a closed loop propel system influence the performance, durability and effectiveness of a propel system

Topics Covered:

- Basics of closed loop hydrostatic system and application engineering, including sizing manually and with the Danfoss "Propel Sizing Tool" prediction calculation
- Group work sessions on choosing components for a system based on a real customer request
- Testing a preinstalled hydrostatic system in a real-time simulation
- Measuring and modification of the main performance indicators
- Apply the learning in a fault-finding exercise

Class Offerings:

To be determined



Participants

Open to Technical Support Engineers



Pre-requisites

HY251 or equivalent knowledge



Location

Dresden, Germany



Duration

31 hours



Tuition

€930

**Must be logged in to your [Danfoss Learning](#) account to register*

System Solutions Fundamentals Training Program

Electronic Controlled Propel Systems

Level 400 (HP402)

Learning Goals:

Participants of this advanced training receive in-depth information on the solutions for electronic propel systems and in particular the automotive control. The practical-oriented, workshop-style course with many hands-on activities provides various opportunities to learn the principles of setting up a system.

Upon completion of this course, students will:

- Understand principle of an electronic-controlled hydrostatic propel system
- Know the components and functions of the electronic propel controller
- Be able to identify the business opportunities for electronic-controlled propel systems

Topics Covered:

- PC-GO Propel software on PC036 controller
- Use of electronic components in hydrostatic propel systems
- Use of the PLUS+1® Service Tool
- Function and parameter setting of an electronic-controlled automotive propel drive
- Creating of drive profiles
- Use of advanced functions
- CAN communication with other components
- Troubleshooting and debugging of a system

Class Offerings:

To be determined



Participants

Open to Technical Support Engineers



Pre-requisites

Basic knowledge in hydrostatic propel systems and electronics



Location

Nordborg, Denmark



Duration

31 hours



Tuition

€930

**Must be logged in to your [Danfoss Learning](#) account to register*



INDUSTRIAL

Industrial Training Program

Industrial

The Industrial Training Program courses include a series of online modules, designed to help our partners learn more about our company and products. Each course is an interactive video and will take about 20-30 minutes to complete. To receive credit for the course, users must pass a quiz at the end of the module with a score of 80% or higher. Subtitles in English are available on request.

Role	Level	PPP Required?	Course ID	Course Title
INDUSTRIAL				
Inside Sales	100	Yes	IND101	Introduction to Airflex Clutch and Brakes**
			IND102	Introduction to Industrial Cylinders
			IND103	Introduction to Industrial Valves
			IND106	Cylinder Terminology Study Course
			IND107	Introduction to Industrial Pumps
			IND111	Introduction to ProFX v2 software for Axis Pro Valves **
			IND112	Proportional Valves Overview **
			IND113	Introduction to Slip-in Cartridge Valves **
			IND114	Introduction to Vane Pumps and Motors **
			IND115	Introduction to PVM Piston Pumps **
			IND116	Introduction to Hydrokraft Pumps and Motors **
			IND117	Introduction to Dowmax Motors **
			IND118	Introduction to Hydraulic Power Units (HPU) **
	200	Yes	IND209	Flow Control Valves Overview **
			IND210	Pressure Control Valves Overview **
			IND212	Directional Control Valves Overview
			IND222	Proportional Valve Overview **
			IND223	Slip-in Cartridge Valve Overview **
			IND224	Servo Valve Overview **
			IND225	AxisPro Proportional Valve Overview **
			IND226	Directional Mobile Valve (DMV) Overview **
			IND227	Vane Pump and Motors Overview **
			IND228	Industrial Medium Power OCP Pumps Overview **
			IND229	Hydrokraft Pumps and Motors Portfolio Overview **
			IND230	Dowmax Motors Portfolio Overview **
			IND231	Industrial Flow Control Valves Overview
			IND232	Industrial Pressure Control Valves Overview

*Must be logged in to your [Danfoss Learning](#) account to register

**Coming soon



SYSTEM SOLUTIONS FUNDAMENTALS

System Solutions Fundamentals Training Program

System Solutions Fundamentals

The System Solutions Fundamentals Training Program courses include a series of online modules, designed to help our partners learn more about our company and products. Each course is an interactive video and will take about 20-30 minutes to complete. To receive credit for the course, users must pass a quiz at the end of the module with a score of 80% or higher. Subtitles in English are available on request.

Role	Level	PPP Required?	Course ID	Course Title
SYSTEM SOLUTIONS FUNDAMENTALS				
Inside Sales	100	Yes	DPS101	Introduction to Electrohydraulic Applications
			DPS102	System Types - Open and Closed Circuits
			DPS103	Hydraulic System Properties
			DPS104	System Management
			DPS105	Fan Drive Systems
			DPS106	Work Function Systems
			DPS107	Propulsion
			DPS108	Steering Systems
			DPS109	Functional Safety - Requirements
			DPS110	Functional Safety - Design
Technical Expert	400	Yes	DPS401	System Solutions Fundamentals - Vehicle Hands-on Training

**Must be logged in to your [Danfoss Learning](#) account to register*

System Solutions Fundamentals Training Program

Vehicle Hands-on Training

Level 400 (DPS401)

Learning Goals:

This course provides practical experience on generic system solutions for typical applications and focuses on the complete vehicle system and its subsystems: system management, thermal management, work function, steering and propel. The main content of the course is to support the design and optimization of typical vehicle systems through practical tests and measurements on real machines. The course will not provide specific tailored solutions for various vehicles.

Upon completion of this course, students will:

- Have full understanding of the vehicle system structure and architecture
- Have full understanding of the vehicle performance and the various functionalities on the vehicle
- Know in detail the characteristics of all the functionalities
- Be able to optimize the various functionalities by adjustment and tuning of various parameters in the system
- Be able to apply the “tool box” filled with test, measurement and analysis methods together with tips and tricks learned during the course
- Be able to test, validate, and document the vehicle performance in typical use situations

Topics Covered:

- Experience various functionalities on relevant vehicle types
- Test and measure vehicle performance in typical use
- Analyze test results
- Tune and optimize vehicle performance
- Training will be performed on different vehicles (can change according to availability) and will cover all 5 subsystems including:
 - System management on an aerial lift (PLUS+1®) and a roller (PLUS+1®) and connected solutions
 - Thermal management on fan drive setup (open/closed circuit)
 - Work function on an aerial lift (S45, PVG 32, OMS), a crane with S45 and PVG 32, and a tractor with PVG32
 - Steering on a tractor, Ackermann/LS-steering
 - Propel on a telehandler (start-up and system review) and a wheel loader (tune and optimize)

Class Offerings:

To be determined



Participants

Open to Technical Support Engineers



Pre-requisites

DPS101-108, HY301, STR301, WF301 or equivalent knowledge level



Location

Nordborg, Denmark



Duration

31 hours



Tuition

€930

*Must be logged in to your [Danfoss Learning](#) account to register



WORK FUNCTION

Work Function Training Program

Work Function

The Work Function Training Program courses include a series of online modules, designed to help our partners learn more about our company and products. Each course is an interactive video and will take about 20-30 minutes to complete. To receive credit for the course, users must pass a quiz at the end of the module with a score of 80% or higher. Subtitles in English are available on request.

Role	Level	PPP Required?	Course ID	Course Title
GEARS				
Inside Sales	100	Yes	GRS102	Fan Drive Fundamentals
			GRS103	Fan Drive Components
			GRS104	Shhark® Technology
	300		GRS301	Product Fundamentals - Gears
MOTORS				
Inside Sales	100	Yes	MTR101	Introduction to Motor Business Unit
			MTR102	Introduction to Motors Product Overview
			MTR103	Disc Valve and Valve in Star Design
			MTR104	Spool Valve Design Motors
STEERING/eSTEERING				
Inside Sales	100	Yes	STR101	Introduction to Steering Business Unit
			STR102	Introduction to Steering Product Overview
			STR103	Basic Steering Systems
			EST101	Introduction to eSteering Business Unit and Product Portfolio Overview
	200	Yes	EST200	Steering Solutions and Applications Basic Training
			EST300	Steering Solutions - EHi and OSPE Training
	300	Yes	STR301	Product Fundamentals - Steering
			EST310	Product Fundamentals - eSteering
			MTR301	Product Fundamentals - Motors
			EST360	Steering Solutions - MultiAxis Steer Training
			EST362	Steering Solutions - PVED-CLS Basic Training
Technical Experts	400	Yes	EST400	Steering Solutions - CAN and Plus+1 Function Blocks Training
			STR401	System Fundamentals - Steering
			STR402	System Fundamentals - Steering Solutions
			SVS401	System Fundamentals - Work Function
			EST408	Steering Solutions - Integration and Validation Training

*Must be logged in to your [Danfoss Learning](#) account to register

Work Function Training Program

Product Fundamentals - Gears

Level 300 (GRS301)

Learning Goals:

This course provides basics about the BU Gears product portfolio. It explains the basics about the design and function of each BU Gears product (e.g., shhark® technology, gear pumps, motors and fan drives). The training covers and explains the main features and value proposition of BU Gears products. There will also be a hands-on demonstration about the different configurations available and how a gear unit works.

Upon completion of this course, students will:

- Understand the BU Gears product portfolio
- Understand the value proposition of each product
- Understand the target markets and main application (e.g., case studies, BU Gears, hot spots, etc.)

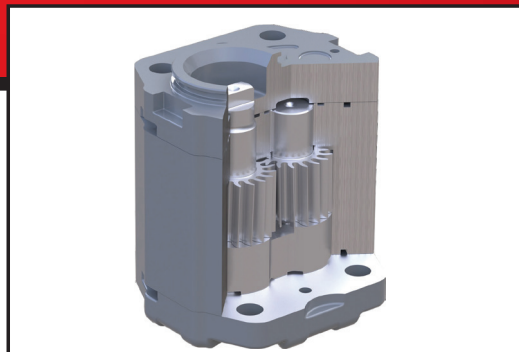
Topics Covered:

- Products: gear pumps, gear motors, shhark®, fan drives
- Introduction to BU Gears business
- BU Gears products and fan drive solutions
- Product selection and sizing/dimensioning
- FAQ overview about BU Gears products
- Workshop on pump and motor configuration
- Real units teardown and assembly
- Competitor's benchmark

Class Offerings:

To be determined

**Must be logged in to your [Danfoss Learning](#) account to register*



Participants

Open to Danfoss distributors, including sales representatives and technical support engineers



Pre-requisites

None



Location

Virtual classroom



Duration

6 hours



Tuition

€180

Work Function Training Program

Product Fundamentals - eSteering

Level 300 (EST310)

Learning Goals:

This course provides theory and hands-on training on the design and function of electro-hydraulic steering units OSPE, EH_i, PVED-CLS actuator, SASA sensor, steering input devices and insights of new product releases. System parameters and purpose are explained, and calibration methods are demonstrated. Participants modify parameters by means of PLUS+1® Service Tool pages. It covers SEHS sub-system design and component requirements as well as functional safety considerations. System safety validation template is discussed.

Upon completion of this course, participants are expected to understand:

- Design of SEHS sub-system
- Sensor requirements
- Purpose of SEHS certification
- Safety validation process
- SEHS calibration
- PLUS+1® Service Tool pages

Topics Covered:

- Products: OSPE, EH_i, PVED-CLS actuator, SASA sensors
- SEHS architecture, ISO 13849
- OSPE physical parts
- Setup and test steering programs, GPS and variable displacement
- Hands-on driving and steering



Participants

Open to Technical Support Engineers



Pre-requisites

STR251 or equivalent knowledge



Location

Virtual classroom



Duration

6 hours



Tuition

€180

Class Offerings:

To be determined

**Must be logged in to your [Danfoss Learning](#) account to register*

Work Function Training Program

Product Fundamentals - Motors

Level 300 (MTR301)

Learning Goals:

Participants of this basic training receive product knowledge about design and function of orbital motors. The course covers an overview on all motors and their options. In addition, the course participant receives insights into the motor production in Nordborg, Denmark.

Upon completion of this course, students will:

- Understand the principles of orbital motors
- Know the components and the functions of all products
- Increase knowledge relating to work function applications
- Be able to identify business opportunities for work function applications
- Know our production facilities in Nordborg, Denmark

Topics Covered:

- Products: orbital motors from Danfoss portfolio
- Basic design and working principles of orbital motors
- Component sizing
- Hands-on exercises and group work

Class Offerings:

To be determined

**Must be logged in to your [Danfoss Learning](#) account to register*



Participants

Open to Sales Representatives and Technical Support Engineers



Pre-requisites

MTR102, MTR103, MTR104



Location

Virtual Classroom



Duration

6 hours



Tuition

€180

Work Function Training Program

Product Fundamentals - Steering

Level 300 (STR301)

Learning Goals:

Participants of this basic training receive insight into the function of open center and load sensing steering systems and product knowledge about design and function of steering components. The course covers steering units, priority valves and flow amplifiers. In addition, the course participants have the option to see the production of our steering products in our Nordborg, Denmark, factory.

Upon completion of this course, students will:

- Understand principles of open center and load sensing steering systems and the related products
- Know the components and the functions of all products
- Have an increased knowledge of steering applications
- Be able to identify business opportunities for steering applications
- Effectively select steering components and prepare specifications for new variants of steering components

Topics Covered:

- Products: Open center steering units: OSPC, OSPD; Load sensing steering units: OSPC, OSPD, OSPF, OSPL and OSPU; OLS priority valves; OSQ flow amplifiers
- Basic design and working principles of our steering products
- Component sizing
- Hands-on exercises in small groups
- Plant tour

Class Offerings:

To be determined

**Must be logged in to your [Danfoss Learning](#) account to register*



Participants

Open to Sales Representatives and Technical Support Engineers



Pre-requisites

Participation in a seminar on hydraulic basics or equivalent knowledge level



Location

Virtual Classroom



Duration

6 hours



Tuition

€180

Work Function Training Program

System Fundamentals - Steering

Level 400 (STR401)

Learning Goals:

The course provides basics about design and function of steering systems. It covers Closed Center (CC) and Open Center (OC) steering. Furthermore, the training focuses on LS-Steering systems including the proper setup of the priority valve and also the influence secondary systems may have on the steering system performance. In a practical part, OC and LS steering systems will be built up by the participants. Workstations equipped with all needed components are available.

Upon completion of the course, participants are expected to:

- Have full understanding of the hydraulic functionalities in a basic steering system
- Know in detail how the main functions of a steering system influence performance durability and effectiveness of a steering system
- Be able to select steering components according to system specification knowledge to check the installation and where/how to measure key measurement

Topics Covered:

Products - LS pumps, open center and closed center systems, reaction and non-reaction systems, steering units, priority valves, static and dynamic load-sensing systems

- Basics of OC and CC steering systems, including component selection based on a request, resulting in a system schematic with selected hydraulic components
- Awareness regarding basic laws, regulations, directives and standards
- Building up the specified steering system with increasing complexity
- Measuring of the main performance indicator
- Modifying the hydraulic settings in the priority valve

Class Offerings:

To be determined

**Must be logged in to your [Danfoss Learning](#) account to register*



Participants

Open to Technical Support Engineers



Pre-requisites

STR251 or equivalent knowledge level



Location

Dresden, Germany



Duration

31 hours



Tuition

€930

Work Function Training Program

System Fundamentals - Steering Solutions

Level 400 (STR402)

Learning Goals:

The first section of this course will focus on traditional hydrostatic steering and will cover: macro circuit types (open center and load sensing), principles and functions of steering units, and priority valves and flow amplifiers. The second section of this course will focus on electro-hydraulic steering and cover: valve configuration, input devices, sensors, functional safety, and software features. This section will also include vehicle demonstrations and troubleshooting examples.

Upon completion of the course, participants are expected to:

- Understand principle of open center and load sensing steering systems and related products
- Know the components and functions of all products
- Have an increased knowledge of steering and eSteering applications
- Be able to identify business opportunities for steering and eSteering applications
- Effectively select steering components and prepare specification for new variants of steering and eSteering components

Topics Covered:

Products - in-depth discussions will be led by applications engineers on various topics including:

- Open center steering units (OSPC, OSPD)
- Load sensing steering units (OSPC, OSPD, OSPF, OSPL, OSPU)
- OLS priority valves
- OSQ flow amplifiers
- OSPE and EHi electrohydraulic power steering valves
- PVED-CLS, PVES, PVED-CC actuators

Content:

- Exercises in small groups
- Plant tour
- Basic design and working principles of our steering products
- Component sizing
- Vehicle demos

Class Offerings:

To be determined

**Must be logged in to your [Danfoss Learning](#) account to register*



Participants

Open to Technical Sales and application engineers



Pre-requisites

None; however, basic knowledge of hydraulics and ability to read schematics is recommended



Location

On-site classroom (Ames, IA)



Duration

27 hours



Tuition

€660

Work Function Training Program

System Fundamentals - Work Function

Level 400 (SVS401)

Learning Goals:

The course provides basics about design and performance of work function systems. It covers open circuit systems, based on a sample customer request: understanding of the purpose of all parts in a work function system and how they interact. The advantages of load-sensing, Danfoss Power Solutions components selection and sizing, and information about needed secondary components such as load holding valves. In a practical part, the designed system needs to be built up by the participants. Therefore, workstations equipped with all needed components are available.

Upon completion of this course, participants are expected to:

- Have a full understanding of the hydraulic and electronic functionalities in a basic load sensing work function system
- Know in detail the main functions of an LS-system
- Influence the performance, durability, and effectiveness of a work function system
- Know how to check the installation and know where to take measurements

Topics Covered:

Products - LS-pumps, PVG 16, PVG 32, joysticks

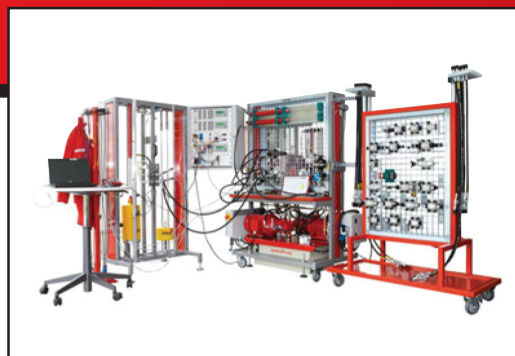
Content: Basics of load sensing work function systems

- Measuring of the main performance indicator
- Modifying the hydraulic settings
- Tracking and modifying the hydraulic parameters
- Learning basic features that the display provides

Class Offerings:

To be determined

**Must be logged in to your [Danfoss Learning](#) account to register*



Participants

Open to Technical Support Engineers



Pre-requisites

PVG251 or equivalent knowledge level



Location

Dresgen, Germany



Duration

31 hours



Tuition

€930



LAUNCH WEBINARS

Virtual Self-Study Courses

Launch Webinars

Level 100

Learning Goals:

"Launch" is a quarterly web-based seminar focusing on new product introductions. Participants will be taken through the new product features and benefits and will learn to study business opportunities.

Content and learning goals will change according to the launch plan and they will include topics such as:

- How to specify the new product/feature
- How to find a part number
- How to find price information
- How to order prototypes
- How to find technical information
- Where to find more information and who to contact

Registration in Danfoss Learning is required to receive the invite to the webinar. The agenda will be shared a few days before the meeting.

Launch Webinars are obligatory events for all partners participating in PPP.



Participants

Open to all Danfoss distributor personnel



Pre-requisites

None



Location

Web-based seminar



Duration

1 hour



Tuition

No charge

2024 Class Offerings:



Asia/Pacific

Time zone: UTC+11, Sydney

Launch Q1 [March 18](#)
16:00 – 17:00

Launch Q2 [June 17](#)
16:00 – 17:00

Launch Q3 [September 23](#)
16:00 – 17:00

Launch Q4 [December 9](#)
16:00 – 17:00



Europe

UTC+2, Berlin

Launch Q1 [March 22](#)
10:00 – 11:00

Launch Q2 [June 21](#)
10:00 – 11:00

Launch Q3 [September 27](#)
10:00 – 11:00

Launch Q4 [December 13](#)
10:00 – 11:00



America

UTC-5, Chicago

Launch Q1 [March 25](#)
10:00 – 11:00

Launch Q2 [June 24](#)
10:00 – 11:00

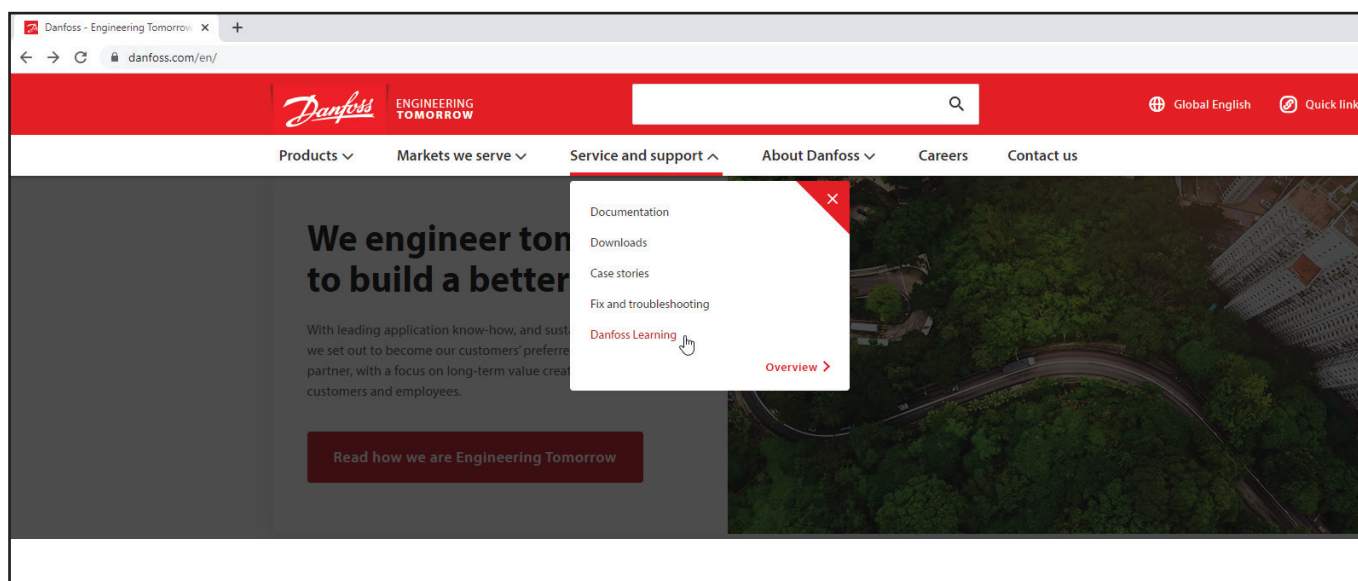
Launch Q3 [September 30](#)
10:00 – 11:00

Launch Q4 [December 16](#)
10:00 – 11:00

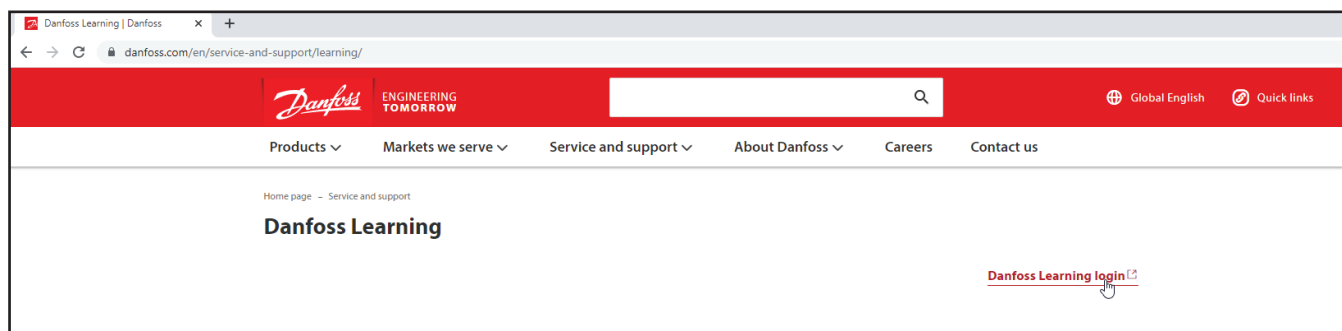
How to access **Danfoss Learning** from the **Danfoss Website**

(Users without my.Danfoss.com)

1. Navigate your browser to Danfoss.com.
2. Click on “Danfoss Learning” under the “Service and Support” menu.



3. Click the link for “Danfoss Learning Login”.



4. Either log in or sign up for a Danfoss Learning profile.

The image shows two overlapping screenshots of the Danfoss Learning profile creation and login interface. The top screenshot, titled "Sign up for a Danfoss Profile", features a "Log in" link and a "Sign up" button. Below this is a section titled "Benefits of a Danfoss Profile" which explains that the profile can be used for all Danfoss applications. The main form area includes fields for "Email *", "Password *", and "Re-type Password *", followed by "First name *" and "Last name *". There are checkboxes for agreeing to the "Danfoss Profile terms of use" and the "Danfoss privacy policy". A red "Submit" button is at the bottom right. The bottom screenshot, titled "Log in or sign up for a Danfoss Profile", shows a "Log in" button and a "Sign up" link. It includes fields for "Email *" and "Password *" with a "Log in" button. A link for "Forgot your password?" is also present. A central text block explains the benefits of the profile and directs new users to the sign-up button.

5. You will receive a verification email and also be prompted to specify your interests so that relevant learning content can be linked to your profile.

The image shows a screenshot of the "Additional information needed for Danfoss Learning" form. The form is titled "Additional information needed for Danfoss Learning" and includes a message: "You are about to use your Danfoss Profile in Danfoss Learning. To proceed we need a little more information. Please fill in all the fields marked with (*)". The form contains several dropdown menus: "Language *", "Company", "Country/Region *", "Time zone *", "Company type *", and "Interest area *". There are also checkboxes for agreeing to the "Danfoss Learning terms of use" and the "Danfoss privacy policy". At the bottom, there are "Submit" and "Cancel" buttons.

Terms and Conditions

Scope

Our Hydraulics Education training sessions are open to Danfoss Power Solutions Sales and Service Partners, and OEM personnel, as well as the general public.

Enrollment

A Danfoss Learning profile is required for enrollment. Enrollment must be completed through the training platform in "Danfoss Learning" for individual learners. Should it prove necessary to change your enrollment, we will do what we can to offer an alternative option. We recommend that you sign up early to secure a seat in the training class you would like to attend; latest enrollment date is three (3) weeks prior to the start of class.

Confirmation

Once you have registered for a class in Danfoss Learning, you will receive a notification that acknowledges your entry. Approximately two (2) weeks prior to the training, you will receive an email that confirms, accepts (or declines) your enrollment, and provides you with all the information you need to attend the class.

Cancellation

We reserve the right to change the venue and/or the date, and to fully cancel a training at short notice (in case of instructor's illness). We will cancel two (2) weeks prior if enrollment falls under the six (6) person minimum class level. In case of cancellations, we will offer you alternative options. In such cases, we will immediately inform those who signed up. Participants who signed up for training sessions that were cancelled cannot make any further claims.

Right of withdrawal

If you should suddenly become unable to attend the training you signed up for, you can pass your seat to a substitute at no further expense. If you are forced to withdraw and cannot find a substitute, please notify us in writing at least two (2) weeks before the class at the latest. If you notify us two (2) weeks before and return the materials, you can withdraw free of charge. If you do not return the materials or you do not show up, you will be charged the entire training price. The process and timing for charging cancellation fees may vary based on payment method.

Completion requirements

Students will be required to attend and participate in all training sessions. Successful completion of courses will require passing an academic exam with a minimum score of 70% in order to receive a certificate of course completion. If an individual does not pass the written test on the first attempt; the attendee will be placed in remediation status and offered one re-test at no additional expense.

Training price

Unless otherwise specified, pricing covers training, training materials and catering (if applicable) during the class hours. ("Free of charge" training provides the same at no charge to the customer.) Invoices will be issued after the training, if applicable to payment method. Hotel accommodations and meals outside of training hours are not included in the training price.

Data protection

As a participant, you accept and agree that Danfoss Power Solutions GmbH & Co. OHG will store and process personal data that are related to your participation in our training sessions.

Liability

We accept no liability other than for damage caused by our employees, either intentionally or negligently. Otherwise we disclaim all liabilities.

Copyright

The reproduction of training material for unauthorized purposes, creation, forwarding, reusing or communicating its contents to third parties, and creation of derivative works are forbidden.

Certificate

After you have successfully completed a training, and pass the assessment, you will receive a certificate (if applicable).

Training duration

The duration of each class varies and appears in the description of the selected training course in the Danfoss Learning training platform.

Safety

As a participant, you are obliged to observe our safety and accident prevention regulations. For our product, system and service training sessions, safety shoes and safety glasses are required.

Room reservation

It is the student's responsibility to arrange hotel accommodations and transportation, but we can provide a list of recommended hotels.

Transportation

Danfoss Power Solutions does not offer any kind of transportation.

Disclaimer

We reserve the right to substitute instructors, and change the contents, procedures and location of a training course, provided that such changes do not impair the intended outcome of the training.