

# Siemens Xcelerator Academy: On-Demand Training

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Offers a portfolio of learning paths for the FloEFD family of products.

- 12 month subscription
- Access to cloud-based environment for hands-on lab exercises
- Access to new training content added during the subscription period
- Knowledge assessments to measure learning progress

## Learning Paths in "CAD Embedded CFD"

Learning Paths provide guided chapters on a subject. Tracks are curated collections of Learning Paths that focus on a specific skill.

Select a Track to focus on developing the skills you need most.

### *On-Demand Training - CAD Embedded CFD*

#### *FloEFD for Solid Edge 8 Chapters*

This course will provide new users of FloEFD for Solid Edge with a background sufficient for tackling a wide range of flow and thermal analysis problems.

#### 1 FloEFD for Solid Edge Learning Path Overview 1 Topic

1. Learning Path Overview

#### 2 Introduction to FloEFD 8 Topics

1. Introduction to CFD
2. The Numerical Basis of FloEFD
3. Introduction to FloEFD Meshing Technology
4. Knowledge Check 1: Introduction to FloEFD
5. FloEFD Capabilities Part 1
6. FloEFD Capabilities Part 2
7. What Does FloEFD Do?
8. Knowledge Check 2: Introduction to FloEFD

#### 3 FloEFD Project Creation 6 Topics

1. Getting started with FloEFD
2. FloEFD Project Creation
3. FloEFD Computational Domain and File Structure
4. Knowledge Check 1: FloEFD Project Creation
5. Lab: FloEFD Project Creation
6. Assessment: FloEFD Project Creation

#### 4 Boundary Conditions and Goals 7 Topics

1. Boundary Conditions in FloEFD
2. Introduction to Goals In FloEFD
3. Knowledge Check 1: Boundary Conditions and Goals
4. Goals Setup In FloEFD
5. Basic Automatic Meshing in FloEFD
6. Knowledge Check 2: Boundary Conditions and Goals
7. Lab: Boundary Conditions and Goals Setup

#### 5 Solving and Post Processing 8 Topics

1. Solving and Monitoring
2. Post Processing: Cut Plots and Surface Plots
3. Knowledge Check 1: Solving and Post Processing
4. Post Processing: Isosurface Plots and Flow Trajectories

5. Post Processing: Numerical Results
6. Knowledge Check 2: Solving and Post Processing
7. Lab: Solving and Monitoring
8. Assessment: Solving and Post Processing

#### 6 FloEFD Meshing 10 Topics

1. Introduction to FloEFD Meshing
2. Manual Global Mesh Settings
3. Global Mesh Refinement Settings
4. Knowledge Check 1: FloEFD Meshing
5. Additional Global Mesh Refinement Settings
6. Local Mesh Settings
7. Knowledge Check 2: FloEFD Meshing
8. Lab: Conjugate Heat Transfer
9. Lab: Mesh Optimization
10. Assessment: FloEFD Meshing

#### 7 Parametric Study 4 Topics

1. Introduction to Parametric Studies
2. Parametric Study Creation
3. DOE and Optimization in FloEFD
4. Knowledge Check 1: Parametric Study

#### 8 FloEFD Advanced Meshing 5 Topics

1. Advanced Refinement Settings
2. Control Planes
3. Solution Adaptive Meshing
4. Knowledge Check 1: FloEFD Advanced Meshing
5. Assessment: FloEFD Advanced Meshing

#### *FloEFD for NX 8 Chapters*

This course will provide new users of FloEFD for NX with a background sufficient for tackling a wide range of flow and thermal analysis problems.

#### 1 Learning Experience Overview - Product Design 2 Topics

1. Welcome: Navigation Overview
2. Product Design track Intro

#### 2 Introduction to FloEFD for NX 9 Topics

1. Introduction to CFD
2. The Numerical Basis of FloEFD
3. Introduction to FloEFD Meshing Technology
4. Knowledge Check 1: Introduction to FloEFD
5. FloEFD Capabilities Part 1
6. FloEFD Capabilities Part 2
7. What Does FloEFD Do?
8. Knowledge Check 2: Create Project
9. Assessment: Introduction to FloEFD

#### 3 FloEFD for NX Project Creation 6 Topics

1. Getting Started with FloEFD
2. FloEFD Project Creation
3. FloEFD Computational Domain and File Structure
4. Knowledge Check: FloEFD Project Creation
5. Lab: FloEFD Project Creation
6. Assessment: FloEFD Project Creation

#### 4 Boundary Conditions and Goals in FloEFD for NX 8 Topics

1. Boundary Conditions in FloEFD
2. Introduction to Goals in FloEFD
3. Knowledge Check 1: Boundary Conditions and Goals
4. Goals Setup in FloEFD

5. Basic Automatic Meshing in FloEFD
6. Knowledge Check 2: Boundary Conditions and Goals
7. Lab: Boundary Conditions and Goals Setup
8. Assessment: Boundary Conditions and Goals

#### 5 Solving and Post Processing in FloEFD for NX 8 Topics

1. Solving and Monitoring
2. Post Processing: Cut Plots and Surface Plots
3. Knowledge Check 1: Solving and Post Processing
4. Post Processing: Isosurface Plots and Flow Trajectories
5. Post Processing: Numerical Results
6. Knowledge Check 2: Solving and Post Processing
7. Lab: Solving and Post Processing
8. Assessment: Solving and Post Processing

#### 6 FloEFD for NX Meshing 9 Topics

1. Introduction to FloEFD Meshing
2. Manual Global Mesh Settings
3. Global Mesh Refinement Settings
4. Knowledge Check 1: FloEFD Meshing
5. Additional Global Mesh Refinement Settings
6. Local Mesh Settings
7. Knowledge Check 2: FloEFD Meshing
8. Lab: Conjugate Heat Transfer
9. Assessment: Meshing

#### 7 FloEFD for NX Parametric Study 5 Topics

1. Introduction to Parametric Studies
2. Parametric Study Creation
3. DOE and Optimization in FloEFD
4. Knowledge Check 1: FloEFD for NX Parametric Study
5. Assessment: FloEFD for NX Parametric Study

#### 8 FloEFD for NX Advanced Meshing 5 Topics

1. Advanced Refinement Settings
2. Control Planes
3. Solution Adaptive Meshing
4. Knowledge Check 1: FloEFD Advanced Meshing
5. Assessment: FloEFD Advanced Meshing

#### *FloEFD for Creo 7 Chapters*

This course will provide new users of FloEFD for Creo with a background sufficient for tackling a wide range of flow and thermal analysis problems.

#### 1 Introduction to FloEFD for Creo 9 Topics

1. Introduction to CFD
2. The Numerical Basis of FloEFD
3. Introduction to FloEFD Meshing Technology
4. Knowledge Check 1: Introduction to FloEFD
5. FloEFD Capabilities Part 1
6. FloEFD Capabilities Part 2
7. What Does FloEFD Do?
8. Knowledge Check 2: Introduction to FloEFD
9. Assessment: Introduction to FloEFD

#### 2 FloEFD for Creo Project Creation 6 Topics

1. Getting started with FloEFD
2. FloEFD Project Creation
3. FloEFD Computational Domain and File Structure
4. Knowledge Check 1: FloEFD Project Creation
5. Lab: FloEFD Project Creation
6. Assessment: FloEFD Project Creation

### 3 Boundary Conditions and Goals in FloEFD for Creo 8 Topics

1. Boundary Conditions in FloEFD
2. Introduction to Goals In FloEFD
3. Knowledge Check 1: Boundary Conditions and Goals
4. Goals Setup in FloEFD
5. Basic Automatic Meshing in FloEFD
6. Knowledge Check 2: Boundary Conditions and Goals
7. Lab: Boundary Conditions and Goals Setup
8. Assessment: Boundary Conditions and Goals

### 4 Solving & Post Processing in FloEFD for Creo 8 Topics

1. Solving & Monitoring
2. Post Processing: Cut Plots, & Surface Plots
3. Knowledge Check 1: Solving & Post Processing
4. Post Processing: Isosurface plots, & Flow Trajectories
5. Post Processing: Numerical Results
6. Knowledge Check 2: Solving & Post Processing
7. Lab: Solving & Monitoring
8. Assessment: Solving & Post Processing

### 5 FloEFD for Creo Meshing 9 Topics

1. Introduction to FloEFD Meshing
2. Manual Global Mesh Settings
3. Global Mesh Refinement Settings
4. Knowledge Check 1: FloEFD Meshing
5. Additional Global Mesh Refinement Settings
6. Local Mesh Settings
7. Knowledge Check 2: FloEFD Meshing
8. Lab: Conjugate Heat Transfer
9. Assessment: FloEFD Meshing

### 6 FloEFD for Creo Parametric Study 4 Topics

1. Introduction to Parametric Studies
2. Parametric Study Creation
3. DOE & Optimization in FloEFD
4. Assessment: Parametric Study

### 7 FloEFD for Creo Advanced Meshing 5 Topics

1. Advanced Refinement Settings
2. Control Planes
3. Solution Adaptive Meshing
4. Lab: Mesh Optimization
5. Assessment: FloEFD Advanced Meshing

### *FloEFD Standalone 7 Chapters*

This course will provide new users of FloEFD Standalone with a background sufficient for tackling a wide range of flow and thermal analysis problems.

### 1 Introduction to FloEFD Standalone 9 Topics

1. Introduction to CFD
2. The Numerical Basis of FloEFD
3. Introduction to FloEFD Meshing Technology
4. Knowledge Check 1: Introduction to FloEFD
5. FloEFD Capabilities Part 1
6. FloEFD Capabilities Part 2
7. What Does FloEFD Do?
8. Knowledge Check 2: Introduction to FloEFD
9. Assessment: Introduction to FloEFD

### 2 FloEFD Standalone Project Creation 5 Topics

1. Getting started with FloEFD
2. FloEFD Project Creation

3. FloEFD Computational Domain and File Structure
4. Lab: FloEFD Project Creation
5. Assessment: FloEFD Project Creation

#### 3 Boundary Conditions and Goals in FloEFD Standalone 8 Topics

1. Boundary Conditions in FloEFD
2. Introduction to Goals In FloEFD
3. Knowledge Check 1: Boundary Conditions and Goals
4. Goals Setup in FloEFD
5. Basic Automatic Meshing in FloEFD
6. Knowledge Check 2: Boundary Conditions and Goals
7. Lab: Boundary Conditions and Goals Setup
8. Assessment: Boundary Conditions and Goals

#### 4 Solving & Post Processing in FloEFD Standalone 8 Topics

1. Solving & Monitoring
2. Post Processing: Cut Plots, & Surface Plots
3. Knowledge Check 1: Solving & Post Processing
4. Post Processing: Isosurface plots, & Flow Trajectories
5. Post Processing: Numerical Results
6. Knowledge Check 2: Solving & Post Processing
7. Lab: Solving & Monitoring
8. Assessment: Solving & Post Processing

#### 5 FloEFD Standalone Meshing 10 Topics

1. Introduction to FloEFD Meshing
2. Manual Global Mesh Settings
3. Solution Adaptive Meshing
4. Global Mesh Refinement Settings
5. Knowledge Check 1: FloEFD Meshing
6. Additional Global Mesh Refinement Settings
7. Local Mesh Settings
8. Knowledge Check 2: FloEFD Meshing
9. Lab: Conjugate Heat Transfer
10. Assessment: FloEFD Meshing

#### 6 FloEFD Standalone Parametric Study 4 Topics

1. Introduction to Parametric Studies
2. Parametric study creation
3. DOE & Optimization in FloEFD
4. Assessment: Parametric Study

#### 7 FloEFD Standalone Advanced Meshing 5 Topics

1. Advanced Refinement Settings
2. Control Planes
3. Solution Adaptive Meshing
4. Lab: Mesh Optimization
5. Assessment: FloEFD Advanced Meshing

#### *FLOEFD for CATIA 8 Chapters*

This course will provide new users of FloEFD for CATIA with a background sufficient for tackling a wide range of flow and thermal analysis problems.

#### 1 Introduction to FLOEFD for CATIA 8 Topics

1. Introduction to CFD
2. The Numerical Basis of FLOEFD
3. Introduction to FLOEFD Meshing Technology
4. KC 1: Introduction to FLOEFD
5. FLOEFD Capabilities Part 1
6. FLOEFD Capabilities Part 2
7. What Does FLOEFD Do?
8. KC 2: Introduction to FLOEFD

## 2 FLOEFD for CATIA Project Creation 5 Topics

1. Getting Started With FLOEFD
2. FLOEFD Project Creation
3. FLOEFD Computational Domain and File Structure
4. KC 1: FLOEFD Project Creation
5. Lab: FLOEFD Project Creation

## 3 Boundary Conditions and Goals in FLOEFD for CATIA 7 Topics

1. Boundary Conditions in FLOEFD
2. Introduction to Goals in FLOEFD
3. KC 1: Boundary Conditions and Goals
4. Goals Setup in FLOEFD
5. Basic Automatic Meshing in FLOEFD
6. KC 2: Boundary Conditions and Goals
7. Lab: Boundary Conditions and Goals Setup

## 4 Solving and Post Processing in FLOEFD for CATIA 7 Topics

1. Solving and Monitoring
2. Post Processing: Cut Plots and Surface Plots
3. KC 1: Solving and Post Processing
4. Post Processing: Isosurface Plots and Flow Trajectories
5. Post Processing: Numerical Results
6. KC 2: Solving and Post Processing
7. Lab: Solving and Post Processing

## 5 FLOEFD for CATIA Meshing 9 Topics

1. Introduction to FLOEFD Meshing
2. Manual Global Mesh Settings
3. Global Mesh Refinement Settings
4. KC 1: FLOEFD Meshing
5. Additional Global Mesh Refinement Settings
6. Local Mesh Settings
7. KC 2: FLOEFD Meshing
8. Lab: Conjugate Heat Transfer
9. Lab: Mesh Optimization

## 6 Parametric Study in FLOEFD for CATIA 4 Topics

1. Introduction to Parametric Studies
2. Parametric Study Creation
3. DOE and Optimization in FLOEFD
4. KC 1: FLOEFD Parametric Study

## 7 FLOEFD for CATIA Advanced Meshing 4 Topics

1. Advanced Refinement Settings
2. Control Planes
3. Solution Adaptive Meshing
4. KC 1: FLOEFD Advanced Meshing

## 8 Assessment: FLOEFD for CATIA 1 Topic

1. Assessment: FLOEFD for CATIA

## *FLOEFD Thermal Management of Electronic Systems 8 Chapters*

The course provides a detailed description of Simcenter FLOEFD™ capabilities in the specific usage of electronics cooling and thermal management.

## 1 Thermal Management and PCB Modeling in FLOEFD 5 Topics

1. Thermal Management in FLOEFD
2. PCB Modeling Levels in FLOEFD
3. PCB Compact Modeling Level
4. KC 1: Thermal Management and PCB Modeling in FLOEFD

5. Lab Exercise 1: PCB Modeling Using Printed Circuit Board and Volume Heat Sources

## 2 Using EDA Data 5 Topics

1. FLOEDA Bridge User Interface and Importing EDA Data
2. FLOEDA Bridge Capabilities
3. EDA Data Transfer to FLOEFD
4. KC 1: Using EDA Data
5. Lab Exercise 2: Modeling Using Smart PCB and Volume Heat Sources

## 3 Component Modeling in FLOEFD 7 Topics

1. Introduction to Thermal Component Models
2. Component Modeling Levels
3. KC 1: Component Modeling in FLOEFD
4. FLOEFD Package Creator
5. Generating and Importing TCMs
6. KC 2: Component Modeling in FLOEFD
7. Lab Exercise 3: Modeling of ICs Using 2R and Detailed Modeling

## 4 Meshing Advices and Thermal Radiation in FLOEFD 3 Topics

1. Meshing Advice
2. Thermal Radiation
3. KC 1: Meshing Advice and Thermal Radiation

## 5 Advanced Post Processing in FLOEFD 3 Topics

1. Post Processing Creating Plane Plots, Surface Plots and Flow Trajectories
2. Post Processing Shortcut and Bottleneck Numbers Equation Goals and Flux Report
3. KC 1: FLOEFD Post Processing

## 6 Cooling Electronic Systems in FLOEFD 5 Topics

1. Cooling Electronic Systems Using Heat Pipes
2. Cooling Electronic Systems Using Axial Fans
3. Cooling Electronic Systems Cold Plates and Joule Heating Effects
4. KC 1: Cooling Electronic Systems in FLOEFD
5. Lab Exercise 4: Thermal Management Using Axial Fans and Heat Pipes

## 7 Calibration in FLOEFD 3 Topics

1. Calibration in FLOEFD
2. KC 1: Calibration in FLOEFD
3. Lab Exercise 5: Calibration

## 8 Assessment: FLOEFD Thermal Management of Electronic Systems 1 Topic

1. Assessment: FLOEFD Thermal Management of Electronic Systems