

UNLOCKING THE POWER OF FUSION

ESSENTIAL GUIDE TO FUSION
TRAINING WITH SYMETRI

FOREWORD

Welcome to the world of Fusion, where creativity converges with precision, and innovation takes flight. In this dynamic landscape of design, engineering, and manufacturing, Symetri stands as your guiding star.

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UNLOCKING THE POWER OF FUSION



Empowering Excellence

At Symetri, we don't just teach software; we ignite possibilities. Our Fusion training courses are more than mere lessons—they are gateways to mastery. Whether you're an aspiring designer or a seasoned professional, our curriculum is meticulously crafted to elevate your skills, expand your horizons, and empower your journey.

Why Fusion?

Fusion isn't just a tool; it's a symphony of creativity. Imagine a cloud-based platform that seamlessly blends 3D modelling, CAD, CAM, CAE, and PCB design. Picture a single canvas where industrial design meets mechanical precision, where collaboration thrives, and where innovation knows no bounds.

That's Fusion—a harmonious fusion of art and engineering.

Our Expertise

Our Fusion courses are led by industry-experienced, Autodesk Certified Application Specialists and Consultants. They don't just teach; they share insights from years of real-world product development. With Symetri, you're not just learning software; you're gaining wisdom.

Your Journey Begins

As you embark on your Fusion voyage, remember this: every line you draw, every simulation you run, and every prototype you create shapes the future. The tools are in your hands; the canvas awaits. Let Symetri be your compass, guiding you through the intricacies of Fusion.

Connect with Us

Ready to unlock the full potential of Fusion? Reach out to us today. Let's sculpt ideas, engineer dreams, and build a better tomorrow



WHY SHOULD YOU USE AN AUTODESK LEARNING PARTNER



Quality Assurance and Expertise

Authorised Learning Partners: Official Autodesk training is delivered by authorised learning partners who have been recognised for their outstanding knowledge and high-quality teaching experiences.

Certified Instructors: These instructors are Autodesk Certified Instructors (ACIs), credentialed professionals with product mastery and instructional skills. They bring real-world insights to the classroom.

Genuine Autodesk Software: Symetri have access to genuine Autodesk software, ensuring that you learn using the same tools used in industry.

Symetri Training

Official training courses are meticulously crafted to cover specific topics, workflows, and competencies. Whether you're a beginner or an advanced user, there's a course for you.

At Symetri, we go beyond standard training. In addition to our custom tailored courses, we provide an extensive array of standard scheduled programs. These sessions are designed for both individual learners and teams, ensuring flexibility and accessibility.

Classroom-Based Courses:

Immerse yourself in our fully equipped classrooms. These purpose-built environments foster focused learning, interaction, and hands-on practice.

Benefit from face-to-face instruction, collaborative discussions, and expert guidance.

Virtual Classroom Experience:

Our unique 'Virtual Classroom' brings the training directly to you, wherever you are. Engage in live online sessions led by seasoned instructors.

Interact with peers, participate in exercises, and gain practical skills—all from the comfort of your workspace, in a custom built platform developed solely for software training.

On-Site Training:

We understand that convenience matters. That's why we offer on-site training at your organisation's premises.

Our instructors will come to you, tailoring the content to your specific needs and workflows.

Hands-On Experience

Interactive Learning: In official training, you get hands-on experience through practical exercises, projects, and simulations. This active engagement accelerates your learning process.

Real-World Scenarios: Training centres focus on real-world scenarios, helping you apply software skills to actual design and engineering challenges.

Customised Learning

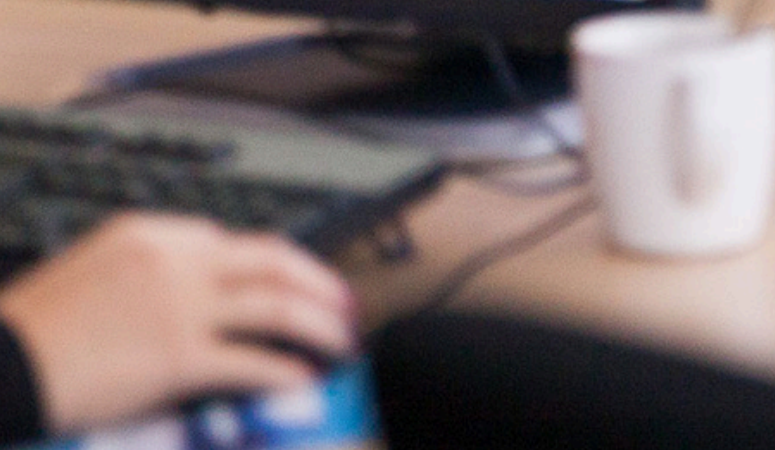
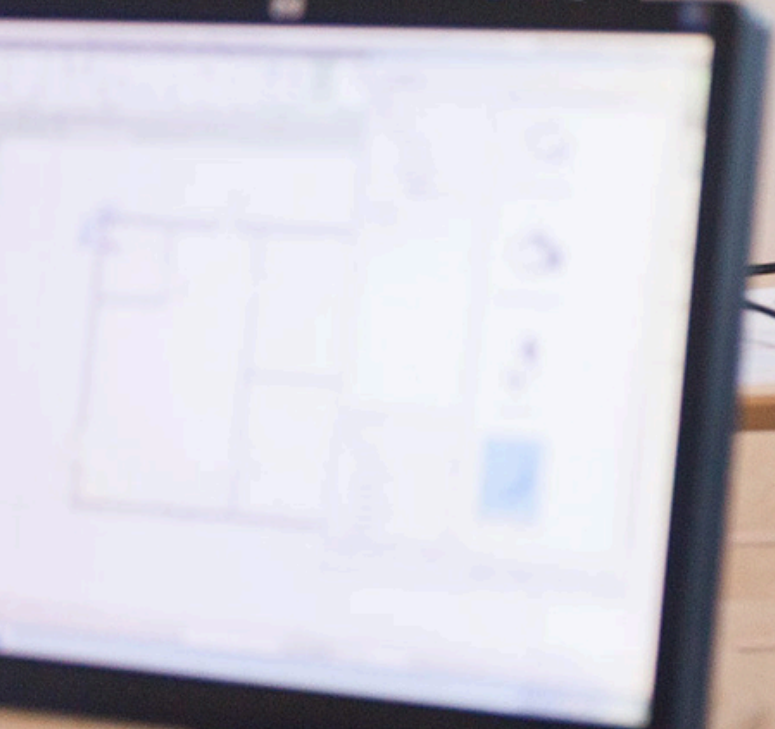
At Symetri, we recognise that one size does not fit all. Our official training offerings extend beyond the ordinary—they are meticulously customised to align seamlessly with your organisation's unique workflows and procedures.

In summary, official Autodesk training combines expert guidance, practical experience, and real-world benefits, making it a powerful choice for anyone serious about mastering Autodesk software. Remember, every line you draw in your training journey shapes your future as a skilled professional.



FUSION TRAINING COURES

CLASSROOM | VIRTUAL | CUSTOMER
SPECIFIC



FUSION RENDERING

FUSION RENDERING

This 1-day Rendering course is for users who wish to produce professional-level renders using Fusion. Fusion has a very high-level render engine that can be learned quickly. Therefore this 1-day course is geared up for building user skills to a high level with short sharp examples

COURSE CONTENT FOR AUTODESK FUSION RENDERING

- Understand the Autodesk Fusion rendering workspace
- Add, edit and load materials and appearances
- Import, scale, apply and modify decals
- Utilise and edit existing environments
- Build dummy geometry to help visualise and render with light
- Learn canvas, local and cloud rendering methods

BENEFITS OF AUTODESK FUSION RENDERING

- ✓ Understand the fundamentals of rendering with Fusion
- ✓ Learn how to create new materials, appearances and environments
- ✓ Work towards an advanced understanding of rendering
- ✓ Export professional rendering images to your cloud gallery

EXPECTED OUTCOME

On completing this training course, you will learn how to build a rendered environment that can make your design look amazingly realistic.

After completing the course, you can log in to your student account and download a personal certificate.

FUSION SHEET METAL

FUSION SHEET METAL

This 1-day course has been tailored to help build user confidence with sheet metal techniques in Autodesk Fusion.

COURSE CONTENT FOR AUTODESK FUSION - SHEET METAL

- Understand the Autodesk Fusion sheet metal interface and tools
- Create and modify sheet metal rules
- Produce and adjust features using specific sheet metal operations
- Build multi-body sheet metal components to represent assemblies
- Create and document flat patterns for manufacturing
- Set, arrange and modify items

BENEFITS OF AUTODESK FUSION SHEET METAL TRAINING

- ✓ Understand the fundamentals of sheet metal and their rules
- ✓ Gain skills building sheet metal designs
- ✓ Learn to set and arrange components in a single sheet
- ✓ Work towards an advanced understanding of preparing your model for manufacture

EXPECTED OUTCOME

On completion of this training course, you will understand how to create sheet metal designs in preparation for manufacturing.

After completing the course, you will receive an Autodesk certificate of completion.

FUSION SURFACE AND FORM

FUSION SURFACE AND FORM

This course is for designers who wish to take their modelling skills to the next level. The course will walk you through how to create complex models with Fusion's surface and form workflows.

COURSE CONTENT FOR AUTODESK FUSION - SURFACE AND FORM

- Understand the Autodesk Fusion surface and form tools
- Import and work with AnyCAD files
- Create and modify features using specific workflows for surface and form models
- Build geometry using surface and form features collectively
- Import and calibrate images to build conceptual design intent
- Understand and learn to modify the timeline for clarity

BENEFITS OF AUTODESK FUSION SURFACE AND FORM

- ✓ Understand the fundamentals of surface modeling
- ✓ Learn to build surface and form models around existing images
- ✓ Gain confidence in the structure and modification of surface and form modeling
- ✓ Work towards an advanced understanding of surface and form modeling

EXPECTED OUTCOME

On completion of this training course, you will have the fundamentals to build surface and form components with ease.

After completing the course, you will receive an Autodesk certificate of completion.

FUSION MULTI AXIS MACHINING



FUSION MULTI AXIS MACHINING

This course is a fantastic next stage for users who have completed our Fusion Milling Course. Our Fusion Multi Axis course will complete your knowledge of milling up to a 5-axis simultaneous level. Our course will walk you through examples at a professional level giving you the confidence to build manufacture setups for your 3+1, 3+2 and 5-axis needs. Please note that you must have access to the Fusion Manufacturing extension to utilise the skills you learned in this course.

COURSE CONTENT FOR AUTODESK FUSION MULTI-AXIS MACHINING

Day 1 – Focus on 4-axis machining operations and hole recognition.

- Recap of 3D machining operations
- Introduction to 4-axis machining operations using the rotary operations
- Using fixtures setups with 4-axis machining operations
- Introduction to collision avoidance
- Learn to use automated hole recognition to detect holes

Day 2 – Focus on multi-axis machining operations and Inspection.

- Introduction to 5-axis operations, including swarf, advanced swarf and multi-axis finishing
- Learn how to use turn and tilt manipulators for tool orientation
- Gain knowledge of tool axis methods to avoid collisions
- Utilise toolpath modification methods including trimming, deleting, replacing tools and moving entry points
- Inspect surfaces and create inspection reports for further analysis
- Use intelligent part alignment methods during inspection routines

FUSION MULTI AXIS MACHINING

BENEFITS OF AUTODESK FUSION MULTI AXIS MACHINING

- ✓ Learn the fundamentals of multi-axis machining using Autodesk Fusion
- ✓ Confidence gains with complex toolpath editing commands
- ✓ Enhance productivity gain with a wide and valued knowledge
- ✓ Understand the importance of advanced workflows

EXPECTED OUTCOME

As a result of attending this training course, you will understand the extended workflows that are critical to adding improved performance and efficiency when machining for manufacture.

After completing the course, you will receive an Autodesk certificate of completion.

FUSION TURNING



FUSION TURNING

Fusion Turning is a 1-day course put together to give users an experience of all Fusion has to offer with Turning. This course will go through the creation of setups, tools and operations based on turned parts. The level of this course is geared towards new and transitioning users. Please note for users who wish to combine milling and turning we recommend the Fusion Turning with Mill/Turn Course as an alternative.

COURSE CONTENT FOR AUTODESK FUSION TURNING

- Introduction to the Turning ribbon in the manufacture workspace
- Quick overview of saving and importing models
- Learn to manipulate models in preparation for CAM operations
- General Fusion CAD/CAM workflow using the 5 tabs system
- Define a turning setup in preparation for machining operations
- Introduction and creation of tool libraries
- Creation and modification of facing operations
- Introduction to boring and grooving operations
- Understanding and practice of drilling operations
- Creation and modification of threads and chamfers
- Validation of toolpaths using simulation of CAM operations
- Identify fixtures in the setup for machining avoidance
- Learn to post-process toolpaths using Autodesk generic post-processors
- View and manipulate NC code after post processing toolpaths
- Generation of set-up sheets for CNC operations

FUSION TURNING

BENEFITS OF AUTODESK FUSION TURNING



Learn fundamental of turning using an Autodesk CAD/CAM solution



Gain confidence utilising Face, Turning and Grooving operations



Simulate and analyse toolpaths with real time results



Generate output files for CNC operators

EXPECTED OUTCOME

As a result of attending this training course, you will be able to create turn machining operations using Fusion, which can be simulated and output using post-processing and CNC operation set up sheets for verification.

After completing the course, you will receive an Autodesk certificate of completion.

FUSION TURNING WITH MILL/TURN



FUSION TURNING WITH MILL/TURN

This 1-day course provides all the essential topics to get you started with Turning including an introduction to Mill/Turn. The content on the course is geared towards new and transitioning users. Please note if you wish to combine milling and turning it is recommended you complete the Fusion Milling course before starting this course as it will give you all the relevant information on milling.

COURSE CONTENT FOR AUTODESK FUSION TURNING

Turning

- Introduction to the Turning ribbon in the manufacture workspace
- Quick overview of saving and importing models
- Learn to manipulate models in preparation for CAM operations
- General Fusion CAD/CAM workflow using the 5 tabs system
- Define a turning setup in preparation for machining operations
- Introduction and creation of tool libraries
- Creation and modification of facing operations
- Introduction to boring and grooving operations
- Understanding and practice of drilling operations
- Creation and modification of threads and chamfers
- Validation of toolpaths using simulation of CAM operations
- Identify fixtures in the setup for machining avoidance
- Learn to post-process toolpaths using Autodesk generic post-processors
- View and manipulate NC code after post processing toolpaths
- Generation of set up sheets for CNC operations

FUSION TURNING WITH MILL/TURN

Mill/Turn

- Introduction and discussion on Mill/Turn techniques
- Create new setups in preparation for Mill/Turn operations
- Build operations for turning and milling collectively
- Speed up toolpath creation using patterns
- Learn how to create part-handling operations including the cut-off operation

BENEFITS OF AUTODESK FUSION MILL/TURN



Learn the fundamentals of Turning and Mill/Turn using Autodesk Fusion



Gain confidence building turn and mill operations collectively



Simulate, generate, and analyse toolpaths with real time results for analysis



Understand how to apply techniques for live tooling and spindle transfer

EXPECTED OUTCOME

As a result of attending this training course, you can create turn-mill machining operations using Fusion, which can be simulated and output using post-processing and CNC operation set-up sheets for verification.

After completing the course, you will receive an Autodesk certificate of completion.

FUSION MILLING

FUSION MILLING

This 3-day Milling course provides you with an understanding of milling operations using High-Speed Machining techniques inside Autodesk Fusion.

COURSE CONTENT FOR AUTODESK FUSION MILLING

Day 1 - Focus on 2D machining operations.

- Understanding the Fusion Manufacture Ribbon
- Introduction and creation of Tool libraries
- Define manufacture setups to include stock data
- Learn how to apply features using a simple 5-tab system
- Introduction to 2D roughing and finishing operations
- Simulation and verification of CAM operations
- Understanding and practice of drilling operations
- Introduction and investigation of machine simulation
- Walkthrough of post-processing and conversion to NC code
- Derive operations and Template Libraries

Day 2 - Focus on moving from 2D to 3D machining operations.

- How to work with various modes of stock
- Introduction to work fixtures and how to define their details in the setup
- Use parameters to control fixture motion for standardisation
- Introduction to 3 Axis roughing operations
- Creation and modification of 3D milling operations

FUSION MILLING

Day 3 - Focus on 3D machining operations.

- Continuation of advanced 3D milling operations
- Creation of Machining Set-up Sheets
- Introduction to 3+1 and 3+2 Axis positional milling
- Understanding and manipulation of tool orientation and wrap of toolpaths

BENEFITS OF AUTODESK FUSION MILLING



Learn the fundamentals of milling using Autodesk Fusion



Gain confidence utilising 2D and 3D milling operations



Introductory knowledge of 3+1 and 3+2 positional milling



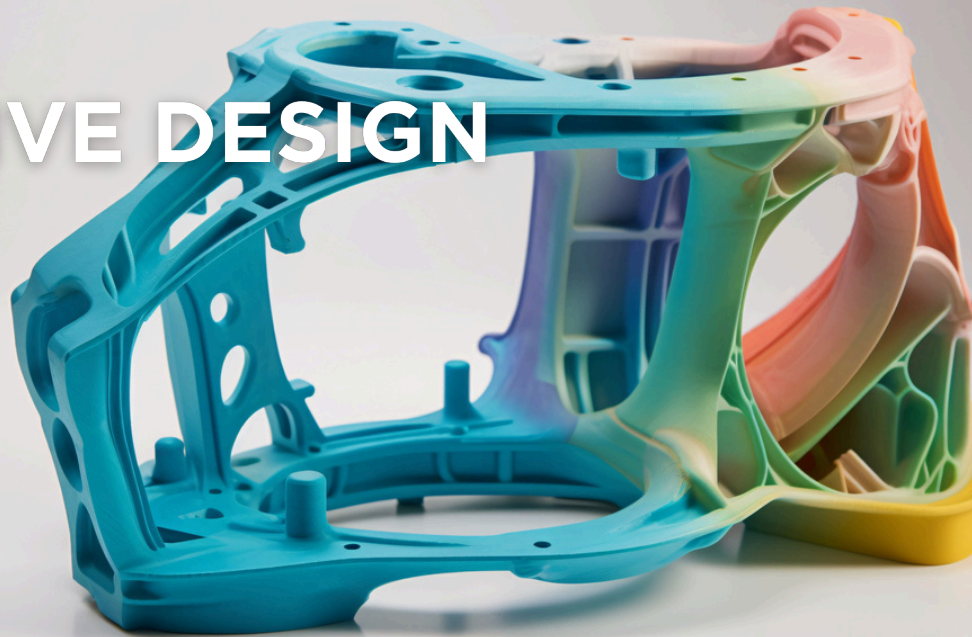
Simulate, generate, and analyse toolpaths with real time results for analysis

EXPECTED OUTCOME

As a result of attending this training course, you will be able to create 2D and 3D milling operations using Fusion, which can be simulated and output using a selected post processor accompanied with operational set up sheets for verification.

After completing the course, you will receive an Autodesk certificate of completion.

FUSION GENERATIVE DESIGN



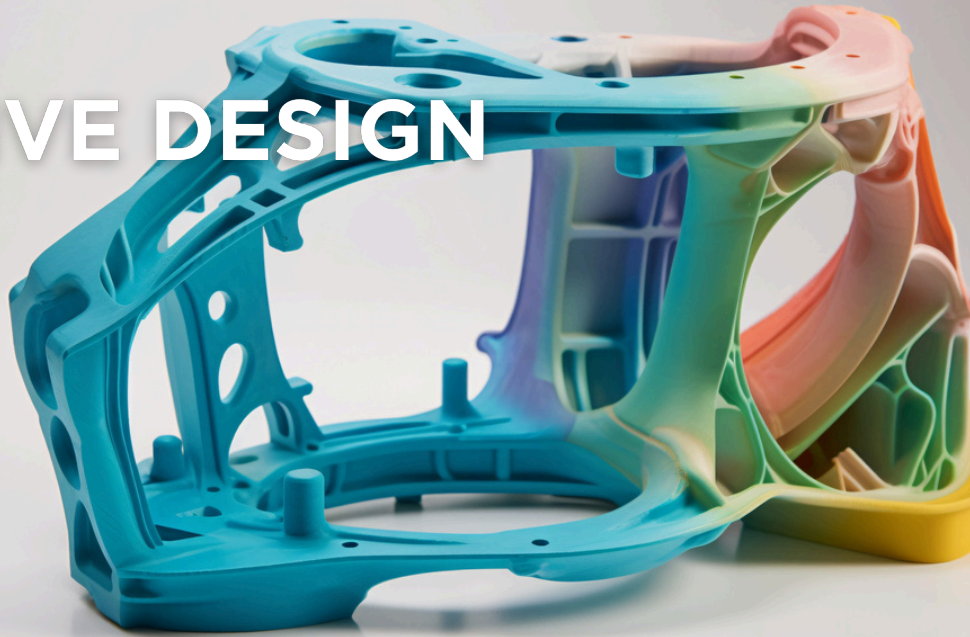
FUSION GENERATIVE DESIGN

Generative Design has its place in the design, engineering and manufacturing process, eliminating traditional process bottlenecks, but still giving the design full control of manufacturing criteria. This one-day course gives the user everything they need to get the full picture of generative design using Fusion. This course can be teamed up with Finite Element Analysis as a perfect duo for analysing lightweight design. Please note that you must have access to the Fusion Simulation extension to utilise the skills you will learn in this course.

COURSE CONTENT FOR AUTODESK FUSION GENERATIVE DESIGN

- Understand the Autodesk Fusion Generative Design workspace
- Overview of the usage of Generative Design
- Create and edit models in preparation for analysis
- Preserve geometry and select obstacles including offsets
- Learn to apply structural loads and constraints to your model
- Understand and set design criteria from project objectives
- Manage and control materials
- Perform pre-checks for validation
- Run and analyse your study using visual comparison tools
- Explore and review conceptual outcomes results
- Perform any additional edits to your model using T-Spline manipulation
- Share your project to invite collaboration

FUSION: GENERATIVE DESIGN



BENEFITS OF AUTODESK FUSION GENERATIVE DESIGN

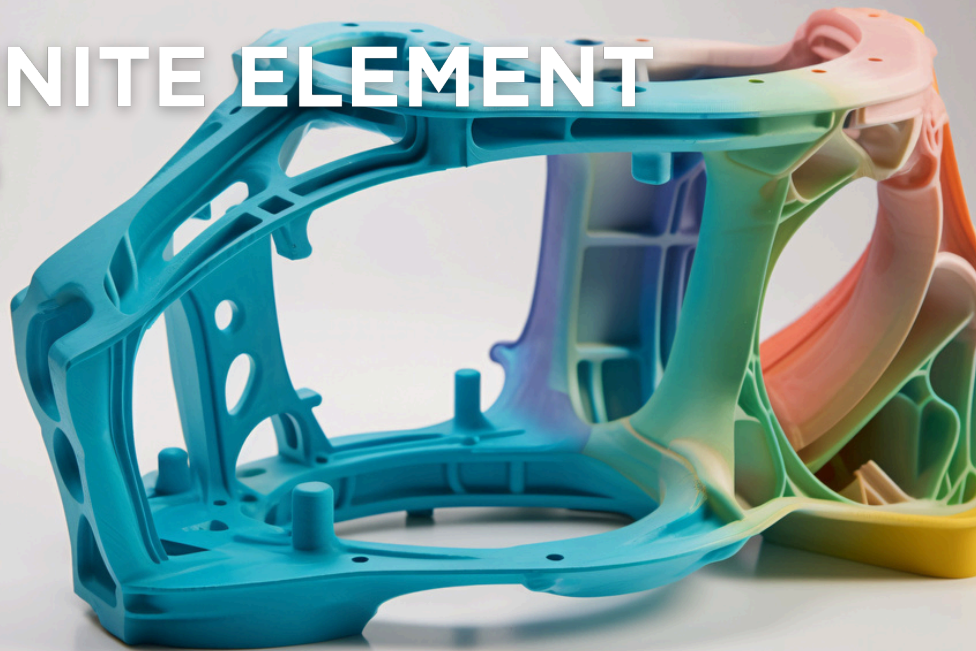
- ✓ Understand the fundamentals of generative design with Fusion
- ✓ Gain confidence creating and analysing Generative Design data
- ✓ Learn how to manipulate CAD models during analysis
- ✓ Acquire the ability to analyse manufacturability in one set of study results

EXPECTED OUTCOME

On completion of this training course, you will gain the basics of how to build and interpret a generative design study within Autodesk Fusion.

After completing the course, you will receive an Autodesk certificate of completion.

FUSION FINITE ELEMENT ANALYSIS



FUSION FINITE ELEMENT ANALYSIS

Our Fusion FEA course is a fantastic opportunity to take your designs to the next level by using static analysis studies. Analysing the strength of your parts is essential when looking to improve structure and weight. This course is a fantastic step-by-step guide to get you started with simulation as a new or transitioning user.

COURSE CONTENT FOR FUSION FINITE ELEMENT ANALYSIS

- Learn the most common features of Fusion Simulation user interface
- Create mesh-independent results
- Discover how to overcome stress singularities
- Learn how to create various contacts within assembly analysis
- Learn how to interpret results including comparing design changes

BENEFITS OF FUSION FINITE ELEMENT ANALYSIS

✓ Learn and understand Finite Element Analysis in Fusion

✓ Gain confidence creating static stress studies using the simulation extension

✓ Understand how to build analysis criteria, including materials

✓ Obtain the ability to read, understand and compare analysis results

ABOUT SYMETRI



WE CHALLENGE PEOPLE TO WORK SMARTER FOR A BETTER FUTURE

Symetri helps manufacturing and engineering companies to optimise working methods and increase the quality of their projects. Our mission is to help you remove waste from engineering and business processes to create more value and increase productivity by incorporating Lean solutions. Our passion is to help you resolve everyday challenges, so your team can focus on innovation and business-critical tasks.

The solutions and services we offer cover the whole lifecycle of your products from Design to Production, Sales, and After Sales & Services. We focus on helping you improve your company's business performance based on high-quality design output, automated routines and efficient use of product information throughout your business operations.

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