# Fusion 360 Lern- und Lehrmaterial Wo finde ich was?

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Education Account Manager



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- Übersicht Fusion 360
- Verschiedene Quellen für Lern- und Lehrinhalte
- Materialien sortiert nach Thema
- Support/Foren



# FUSION 360

### Integrierte CAD-, CAMund CAE-Software

Vernetzen Sie Ihren Produktentwicklungsprozess. Vereinen Sie Konstruktion, Entwicklung, Elektronik und Fertigung auf einer zentralen Plattform.

#### ABONNIEREN

KOSTENLOSE TESTVERSION HERUNTERLADEN >



# **Konstuktion und 3D Modellierung**



# **Generative Design Prozess**



# Simulation

# Nastran basiert:

- Statische Spannung
- Modale Frequenzen
- Kühlung für elektronische Geräte
- Thermisch
- Thermische Spannung
- Strukturelle Knickung
- Nichtlineare statische Spannung
- Ereignissimulation
- Topologieoptimierung
- Lösen in der Cloud



# **Fertigung - CAM / CNC**





**2.5X Milling** *Quick machine prismatic parts* 



**Turning** Produce round parts on CNC Lathes

**3X Milling** Apply advanced 3 Axis surfacing Strategies



Water/Laser/Plasma

Program Waterjets, Laser cutters and CNC Plasma Torches





#### **WCS** Probing

Accurately locate work coordinate systems with on machine probing.

### **Indexed Milling**

Indexed machining (3+2) for Mills and Lathes



## Wrapped 4 Axis

Wrap 2D toolpaths around a cylindrical face.



#### **Multi-Axis Milling**

Multi-Axis Swarf, Multi-Axis Contour & Multi-Axis Tilting

# **Elektromechanische Konstruktion**



# **Zusammenarbeit mit Fusion Team**

- Projekte/Daten teilen
- Benutzerverwaltung
- Versionskontrolle

**Joe Fitzpatrick** 

Is this the crank for the 95 Mustano?

Cancel

Shim in feed

8 0 8

.

- Kommentare
- AnyCAD



V38 🔻

by Dan Banach

by Dan Ba

hš

# **Animation und Rendering**



# Lern- und Lehrmaterialien

Verschiedene Quellen



https://academy.autodesk.com/



SIGN IN

Autodesk supports distance learning globally for students, teachers impacted by COVID-19. Learn more.

# Make a better world. Learn how.

JOIN TODAY

# Join for free

As members of Autodesk Design Academy, students and educators can access free design software, along with free educational resources in manufacturing, construction, and production—including self-paced online courses, guided webinars, tutorials, industry contests, class projects, and curriculum for all levels.

Learn how to design and make a better world.

JOIN TODAY

# Sichtbarer Fortschritt der Kurse für Studierende



#### AUTODESK.

#### Lesson: Creating Preserve Regions for the Hardware

In this lesson, you will create and color-code the preserve regions that the Generative Design process needs to include in its calculated results.

#### Learning Objectives

- · Show how to change the appearance of a component.
- Use Slot.
- Apply a tangency constraint.



	1.	Continue with the file from the previous module. Since the previous module focused on how to select preserve regions, this lesson will focus on creating the preserve regions.		*
	2.	In the Assemble section of the Door, click the Assemble> New Component button. Make the top level of the Browser active.	New Component	Pú) E •
$\left  \right $	3.	In the control panel, enter a name of "Preserve Geometry", Make sure the Activate option is	Emply Component	*

ienerative Design for Ac 7 lessons   20 hours	dditive Manufacturir	ng
Course Description		
<ul> <li>Getting started</li> </ul>		0
/ Lesson 1: How can v	ve utilize Generative	Design O
Lesson 2: Basics of 3	D Modeling in Fusio	on 360 🛛 🖸
<ul> <li>Lesson 3: Creating the world</li> </ul>	e Regions for a Des	ign to 🏾 o
Lesson 4: Creating the Design	e Regions to Keep i	ina O
Step 1: How to identify	preserve regions	
<ul> <li>Step 2: Creating Preservation</li> <li>Iardware</li> </ul>	ve Regions for the	
<ul> <li>Step 3: Practice exercise</li> </ul>	e #1	±

# Anwenden von Filtern bei "Learn"

#### AUTODESK. Design Academy

Autodesk supports	distance le	earning gl	obally	for stud	ents, tea	chers

Home > Curriculum > Generative Design for Additive Manufacturing

#### FILTER BY

SORT BY

Newest

#### Mechanical Engineering

#### Fusion 360

Advanced

Careers - all



MANUFACTURING ENGINEERING Multi-Axis CNC Toolpaths

Computer Numerical Controlled machines, or CNC for short, can have a nearly endless number of options. Most machines today control tool motion in 3-axes, X, Y and Z. but can be...



Advanced ( Time 20h 00m

\* \* \* \* \* 37 Enrolled



#### MECHANICAL ENGINEERING Generative Design for Part Consolidation

Designing a product is only part of the process. Now, can that product be manufactured? In many cases the end product is made up of an assembly of different pieces to simplify...



Content Contributor

Advanced () Time 20h 00m \*\*\*\* 23 Enrolled



MANUFACTURING ENGINEERING Generative Design for Industrial Applications

The foundation of engineering design is exploration and iteration. Design is rarely a perfectly linear and straightforward process. In this course, we explore a design for a...



Matt Perez Content Contributor

Advanced (9 Time 20h 00m

\* \* \* \* \* 32 Enrolled

# Anwenden von Filtern bei "Teach"



ANIMATION ARCHITECTURAL ENGINEERING ARCHITECTURE CONSTRUCTION MANAGEMENT ENGINEERING INDUSTRIAL DESIGN MAKER MANUFACTURING

STEAM

SUSTAINABILITY

their lacas become reality



#### Manufacturing

What's the next step after creating a 3D design? Manufacturing. Fabrication helps designers improve their designs. It's used throughout the design process to create 3D printed prototypes, conceptual models and finished products. Fabrication helps designers refine their designs and make their ideas become reality.

#### FILTER BY Fusion 360 Manufacturing Multi-week Advanced ---SORT BY Most Viewed S ENGINEERING, MANUFACTURING S ENGINEERING, MANUFACTURING S ENGINEERING, MANUFACTURING 1 ENGINEERING, MANUFACTURING Multi-Axis CNC Toolpaths CAM and Design Manufacturing for Simulation Analysis for Mechanical Generative Design for Additive by Matt Perez Manufacturing Mechanical Engineers Engineers + Show More 197 9 0 9 by Matt Perez by Matt Perez by Matt Perez ● 122 ● 0 ♥ 1 + Show More @ 311 P 1 V 1 + Show More + Show More

ngineering, Manufacturing	Level	AUTODESK. Design Academy LEARN TEACH PORTFOLIOS COMMUNITY INSPIRATION		LOG OUT
**	Advanced	Project resource download		
Fusion 360	Multi-week	Getting started In this lesson, we'll discover what you'll learn in this course and download the software and resources	VIEW ASSETS 🔻	
enerative design: Additive Manu Project Resources	ufacturing or 3D printing as it's	Instructor guide Generative Design for Additive Manufacturing	VIEW ASSETS VIEW ASSETS	
Dataset     Lesson Plan	Instructor Manual	What is Generative Design? With generative design it is important to understand the mindset needed to set up a generative design study and control the areas where it can and can't explore.	VIEW ASSETS 🔻	
Stephoy-step Guide		Defining a Generative Setup Expand into a generative design study utilizing the preserve and obstacle regions created in the prior week to explore the various options and settings which will drive our generative outcomes.	HIDE ASSETS	
	_	Generative Design - Additive manufacturing - Week 2 Overview video.zip 7.76 MB		2
		Lesson 1: Defining a Generative Study's Objectives and Settings 81.91 MB		2
		Lesson 2: Using Edit Model to work on Obstacles and Preserves 47.05 MB		Ł
		Lesson 3: Setting up Loads and Constraints 73 MB		2

# "Specialization" Content for Mechanical Engineering Classrooms available on Autodesk Design Academy

Courses and curricula



Ideal for 2-yr machining students and educators, HTEC.



Introduction to CAD, CAM, and Practical CNC Machining Curriculum | Self-Paced

3-Axis Machining with Autodesk Fusion 360 Curriculum | Self-Paced

Creating Toolpaths for a CNC Lathe Curriculum | Self-Paced

Multi-Axis CNC Toolpaths Curriculum | Self-Paced Courses and curricula

Generative Design for Manufacturing

Ideal for 4-yr mechanical engineering students and educators.



Generative Design for Additive Manufacturing Curriculum | Self-Paced

Generative Design for Performance and Weight Reduction Curriculum | Self-Paced

Generative Design for Industrial Applications Curriculum | Self-Paced

Generative Design for Part Consolidation Curriculum | Self-Paced

#### CAD/CAM/CAE for Mechanical Engineering

Courses and curricula

Ideal for 4-yr mechanical engineering students and educators.



Introduction to Mechanical Design and Manufacturing <u>Curriculum | Self-Paced</u>

Modeling and Design for Mechanical Engineers Curriculum | Self-Paced

Simulation Analysis for Mechanical Engineers Curriculum | Self-Paced

CAM and Design Manufacturing Curriculum | Self-Paced

**Click links to access** 

How can schools use this content? Educators can download curriculum to blend into their own LMS. Students can work at their own speed with a self-paced course. https://academy.autodesk.com/

# Learn and earn Specializations

Certifications and Specializations work together to recognize achievements and signal job readiness.

SPECIALIZATION

Specialization for Workflows

"Learn and earn"

What achievement does this recognize?	<b>Completion.</b> Finishing a 4-5 course series.
What competencies does this recognize?	<b>Workflows.</b> Specializations recognize workflow-based learning, which require learners to work through real-life processes.
What's the time expected in product to earn a Specialization?	<b>40+ hours.</b> Learners are expected to have some experience in the software, but will also software tools and skills along the way.
How much time does it take to complete this Specialization?	<b>50+ hours.</b> Much like a degree, learners are expected to complete the entire course series to earn a Specialization.
What type of assessment does this deliver?	<b>Summative and peer evaluated.</b> Quizzes are delivered at the end of instructional units, as well as peer-graded assignments.
Where can you take the Specialization?	Autodesk Design Academy + Coursera





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4	De	UTOD esign	Aca	sk. cademy LEA	RN	TEACH	PORTFOLIOS	COMMUNITY	INSPIRATION	ABOUT US	ス [	SIGN	N IN	]
Home	> (	Curricul	lum	<ul> <li>Modeling and Design for Mechanical Engineers</li> </ul>										



There are many considerations that play a part in engineering a new product. Regardless of what that product is, there are fundamentals such ....

#### **Project Resources**

ASSET DOWNLOAD 📥





Software tutorials





LOG OUT

Herbert Bickelmann has been unenrolled in the course Modeling and Design for Mechanical Engineers.



Modeling and Design for Mechanical Engineers 16 lessons   20 hours	
(i) Course Description	
Getting started	0
Lesson 1: Creating the basis of a design	0
Lesson 2: Converting detailed sketches into detailed designs	0
Lesson 3: Designing a basic sheet metal part	0













# FUSION 360

https://www.autodesk.de/products/fusion-360



FUSION 360

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#### SCHULUNG UND SUPPORT



#### Selbststudium

Greifen Sie auf Schulungsvideos und Kurse zum Selbststudium zu.



#### Produktdokumentation

Sehen Sie sich technische Dokumentationen und Schritt-für-Schritt-Anleitungen an.



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#### Veranstaltungen und Webinare

Registrieren Sie sich für Live- und On-Demand-Webinare und lokale Veranstaltungen.



Blog

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Tauschen Sie sich mit Kollegen aus und erhalten Sie Unterstützung durch Experten.

# Self-paced learning for Fusion 360

Get started with the learning materials below. Each course includes videos, step-by-step tutorials, and downloadable 3D models to help you learn Fusion 360 at your own pace. Getting Started for Absolute Beginners



- Transitioning from Another CAD/CAM System
- Mechanical Assemblies
- Generative Design
- Product Design and Development
- Test, Validate and Explore Alternatives
- Creating Toolpaths and Programs (CAM)
- Fusion 360 Academy



Reginner

Course



It's important to have a good understanding of 30 modeling as you make your first design. This two hour course explores the core concepts of Pusion 300 with a parties of locatures and exercises.
 Start Learning

This course covers attait you need to know to adr your subscriptions and manage a Fution Team. Start Learning

#### Transitioning from Another CAD/CAM Syste





Solidworks Transition Guide 9 Jessons Beginner Lecture

If you come from a SelidWorks Sackground, this orients you in Pusion 360°s workspaces and new modeling paradigms to accelerate your design workflows Spart Learning

Course:
 If you came hom a Mastericam background,
 goes through Fusion 300% interface and you
 style to get you use and numming as asickly an
 o Starr Learning

7 lessons

Beginner

#### Mechanical Assemblies





) S4 lessons Beginner | Tutoriel

This tutorial covers the fundamentals for building mechanical assemblies in Fusion 380. Learn how to create components, import geometry, work with essemblies and joints, create drawings, and much more.

# Fortschritt der Kurse bei Anmeldung (Beispiel)





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# **Product Documentation**



 Selbststudium		Schulun	gen un	d Doku	nentatio	n	
Produktdokumentation	E	Schnells	tart				
Fusion 360-API		Commun	iity				
	T_	Support	und Di	agnose			
		Neue Fu	nktione	en			
		Info					

#### 😳 Get Started

- Extensions
- 🗘 Cloud Credits
- 😳 Teams, Projects, & Designs
- 🗘 Design: Sketch
- 🗘 Design: Solid
- 😳 Design: Form
- 😑 Design: Assemble
  - Assembly modeling overview
  - Bodies and components
  - Distributed design strategies
  - Define component location and relationships
  - 😳 Edit in Place
  - 😑 Tutorials
    - Tutorial: Top-down design method of assembly
    - 🕒 Tutorial: Manually adding joints
    - Tutorial: Working with subassemblies and As-built joints
    - Tutorial: Enabling motion using joints and contact sets
  - C Reference



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4162 Aufrufe • vor 5 Tagen

Manufacturing files

1906 Aufrufe • vor 1 Woche

**Fusion Team** 2204 Aufrufe • vor 2 Wochen

3293 Aufrufe • vor 3 Wochen

with Fusion 360

2526 Aufrufe • vor 3 Wochen

#### Erstellte Playlists

#### SORTIEREN NACH

>





#### Generative

41 Videos • 6.506 Aufrufe • Zuletzt am 02.01.2020 aktualisiert

X Ξ. ....

Autodesk Fusion 360

ABONNIERT

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SRAM is Pushing Bicycle Componentry with Generative Design in Fusion 360

Autodesk Fusion 360



360 LIVE: What's New in Generative!

Autodesk Fusion 360



360 LIVE: Sculpting Generative Results Autodesk Fusion 360



Generative Tutorial 1 of 8 Preserve

Autodesk Fusion 360



Generative Tutorial 2 of 8 Motor Mount Obstacles

Autodesk Fusion 360



Generative Tutorial 3 of 8 Other Obstacles

Autodesk Fusion 360



Generative Tutorial 4 of 8 Loads and Constraints

Autodesk Fusion 360



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#### EVENTS ALL EVENTS WEBINAR VIRTUAL LAB DEEP DIVE ON DEMAND

Join us at one of our Fusion 360 events to talk about design, get hands-on training, tips and tricks, glimpses into the product roadmap and more.

#### **UPCOMING EVENTS**





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# FUSION 360 BLOG

Explore product updates and enhancements, useful Fusion 360 tips and tutorials, roadmap updates and community stories.

# Lern- und Lehrmaterialien

# Nach Themen

# Fusion 360 Material nach Themenbereichen

- Installation von Fusion 360
- Einsatz von Fusion Team
- 3D Modellierung und Baugruppen
- Arbeiten mit Fremddaten
- Generatives Design
- Simulation
- CAM
- Elektromechanik
- Rendering
- Zeichnungsableitungen



Wir arbeiten an einem Dokument, welches die wichtigen Links zu den Themen enthält

# Support / Foren / Socialmedia



5.000 Mitglieder



28.800 Mitglieder



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# ← → C ▲ knowledge.autodesk.com/support/fusion-360/troubleshooting?sort=score ▲ AUTODESK. ■ AUTODESK KNOWLEDGE NETWORK Search Fusion 360 Autodesk understands that working remotely can be challenging. We are here to help. Find out how to get a series of the second s



LEARN TROUBLESHOOTING FORUMS

#### Recommended Content

Message: "Sign in Failure: There was an error while logging into Fusion 360"

How to add the Image2 surface script into add-in in Fusion360

How to transfer CAM tool libraries from Fusion 360 to HSM CAM Products





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