



# SOLIDWORKS Advanced Sketching and Reference Geometry

This course is part of [SOLIDWORKS 3D CAD for Education Specialization](#)



Instructor: [SOLIDWORKS](#)

2,551 already enrolled

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## 3 modules

Gain insight into a topic and learn the fundamentals.

4.8 ★

(31 reviews)

## Beginner level

Recommended experience ⓘ

8 hours to complete

## Flexible schedule

Learn at your own pace

## Skills you'll gain

Engineering Drawings

Mechanical Engineering

SolidWorks (CAD)

Computer-Aided Design

## Details to know



Shareable certificate

Add to your LinkedIn profile



Assessments

2 assignments



Taught in English

See how employees at top companies are mastering in-demand skills





## Build your subject-matter expertise

This course is part of the [SOLIDWORKS 3D CAD for Education Specialization](#). When you enroll in this course, you'll also be enrolled in this Specialization.

- Learn new concepts from industry experts
- Gain a foundational understanding of a subject or tool
- Develop job-relevant skills with hands-on projects
- Earn a shareable career certificate

## There are 3 modules in this course

Welcome to SOLIDWORKS Advanced Sketching and Reference Geometry, the second course in the SOLIDWORKS 3D CAD for Education Specialization. We recommend completing Course 1(SOLIDWORKS Foundations: Sketching and Extrusion) before starting this course.

This course dives deeper into 2D sketching techniques and introduces reference geometry tools to enhance your modeling precision and flexibility.

Upon completion of this learning module, you will be able to:

- Create linear sketch patterns
- Create circular sketch patterns
- Create reference planes and axes.
- Create slots in the sketch profile.

This course is perfect for learners ready to level up from the basics and tackle more advanced modeling techniques.

Software Prerequisites:  
SOLIDWORKS Desktop EDU

Access powerful capabilities for Engineering with SOLIDWORKS Desktop at a low price, \$60 (excluding taxes), follow this link : <https://go.3ds.com/CSW1>

[Read less](#)




### Welcome to SOLIDWORKS Advanced Sketching and Reference Geometry Course

Module 1 • 20 minutes to complete

[Module details](#) ^

In this module, you'll get an overview of the course structure and what to expect as you progress.

#### What's included

 1 video    1 reading    1 discussion prompt

Hide info about module content ^

 1 video

SOLIDWORKS Advanced Sketching and Reference Geometry Course Introduction • 0 minutes

 1 reading • Total 10 minutes

Welcome to the SOLIDWORKS Advance Sketching & Reference Geometry Course! • 10 minutes

 1 discussion prompt • Total 10 minutes

Share your thoughts • 10 minutes



## Practice Sketch Patterns (Level 3)

[Module details](#) ^

Module 2 • 3 hours to complete

In this module, you'll learn to create 3D objects from 2D drawings in SOLIDWORKS, while also exploring the use of linear and circular sketch patterns for CAD problem-solving.

### What's included

 1 assignment  5 plugins

Hide info about module content ^

 1 assignment • Total 10 minutes

Quiz: Practice Sketch Patterns • 10 minutes

 5 plugins • Total 195 minutes

Introduction to Practice Sketch Patterns (Level 3) • 15 minutes

Create a Straight Gear Rack (Level 3.1) • 30 minutes

Create a Heat Sink (Level 3.2) • 45 minutes

Create a Gear (Level 3.3) • 45 minutes

Create a 80-20 Extruded Aluminum (Level 3.4) • 60 minutes



## Practice Reference Geometry (Level 4)

[Module details](#) ^


Module 3 • 4 hours to complete

In this module, you'll learn to create 3D objects from 2D drawings in SOLIDWORKS, using reference geometries (planes & axes) and slot sketch entities.

### What's included

 1 assignment  5 plugins

Hide info about module content ^

 1 assignment • Total 10 minutes

Quiz: Practice Reference Geometry • 10 minutes

 5 plugins • Total 255 minutes

Introduction to Practice Reference Geometry (Level 4) • 15 minutes

Create a Miscellaneous Part (Level 4.1) • 60 minutes

Create a Flange (Level 4.2) • 60 minutes

Create a Multi-Angled-Fixture Block (Level 4.3) • 60 minutes

Create a Angled Bracket (Level 4.4) • 60 minutes



### Earn a career certificate

Add this credential to your LinkedIn profile, resume, or CV. Share it on social media and in your performance review.

## Instructor

Instructor ratings  5.0  (7 ratings)



### SOLIDWORKS

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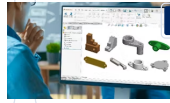


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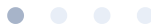
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**Felipe M.**

Learner since 2018

"To be able to take courses at my own pace and rhythm has been an amazing experience. I can learn whenever it fits my schedule and mood."



★ **4.8** 31 reviews



DG

★ 4 · Reviewed on Sep 3, 2025

Overall great, some of the instructions were not clear and sometimes the instruction lack measurements or mixed up lines.

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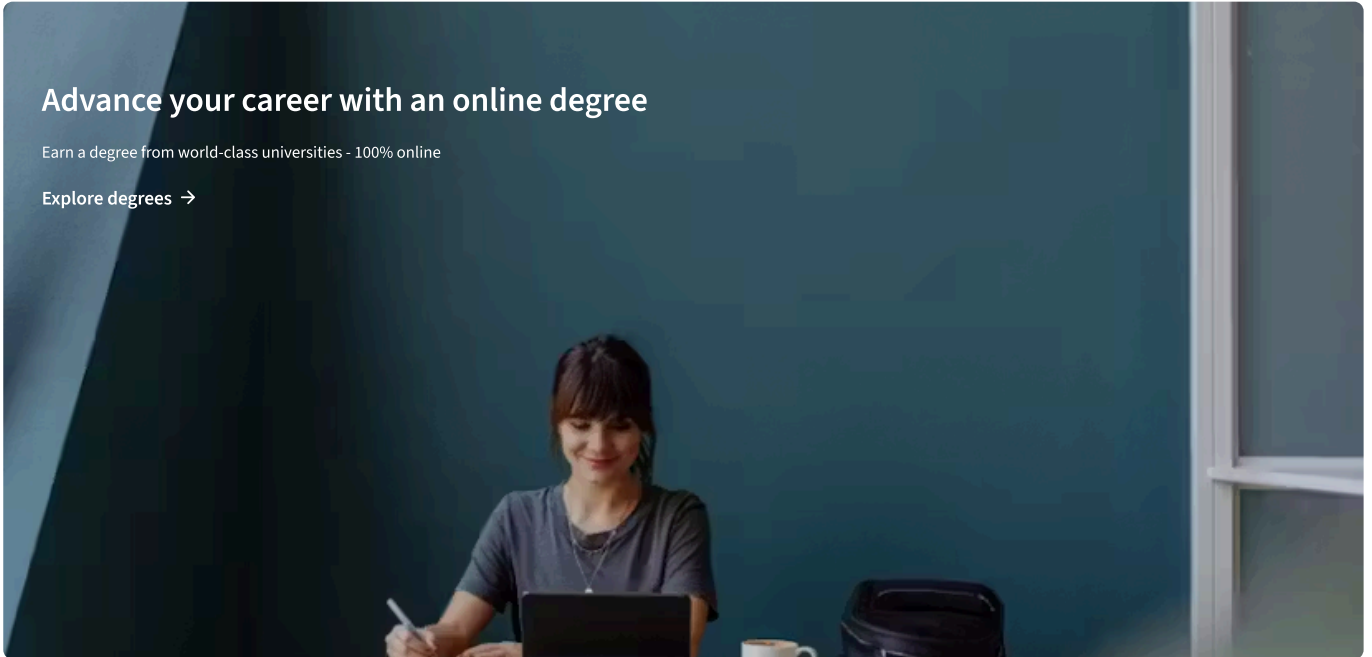
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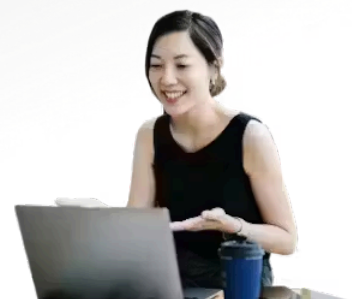
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### Frequently asked questions

#### ^ When will I have access to the lectures and assignments?

To access the course materials, assignments and to earn a Certificate, you will need to purchase the Certificate experience when you enroll in a course. You can try a Free Trial instead, or apply for Financial Aid. The course may offer 'Full Course, No Certificate' instead. This option lets you see all course materials, submit required assessments, and get a final grade. This also means that you will not be able to purchase a Certificate experience.

### ^ What will I get if I subscribe to this Specialization?

When you enroll in the course, you get access to all of the courses in the Specialization, and you earn a certificate when you complete the work. Your electronic Certificate will be added to your Accomplishments page - from there, you can print your Certificate or add it to your LinkedIn profile.

### ^ Is financial aid available?

Yes. In select learning programs, you can apply for financial aid or a scholarship if you can't afford the enrollment fee. If fin aid or scholarship is available for your learning program selection, you'll find a link to apply on the description page.

## More questions



[Visit the learner help center](#)

Financial aid available, [learn more](#)

### Skills

Artificial Intelligence (AI)  
Cybersecurity  
Data Analytics  
Digital Marketing  
English Speaking  
Generative AI (GenAI)  
Microsoft Excel  
Microsoft Power BI  
Project Management  
Python

### Certificates & Programs

Google Cybersecurity Certificate  
Google Data Analytics Certificate  
Google IT Support Certificate  
Google Project Management Certificate  
Google UX Design Certificate  
IBM Data Analyst Certificate  
IBM Data Science Certificate  
Machine Learning Certificate  
Microsoft Power BI Data Analyst Certificate  
UI / UX Design Certificate

### Industries & Careers

Business  
Computer Science  
Data Science  
Education & Teaching  
Engineering  
Finance  
Healthcare  
Human Resources (HR)  
Information Technology (IT)  
Marketing

### Career Resources

Career Aptitude Test  
Examples of Strengths and Weaknesses for Job Interviews  
High-Income Skills to Learn  
How Does Cryptocurrency Work?  
How to Highlight Duplicates in Google Sheets  
How to Learn Artificial Intelligence  
Popular Cybersecurity Certifications  
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What Is Artificial Intelligence?

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