



FIVE-DAY PRACTICAL COURSE

Additive Manufacturing & CAD Design

From blank canvas to finished prototype — five days hands-on with industry-standard CAD and 3D printing

www.reskillwales.co.uk



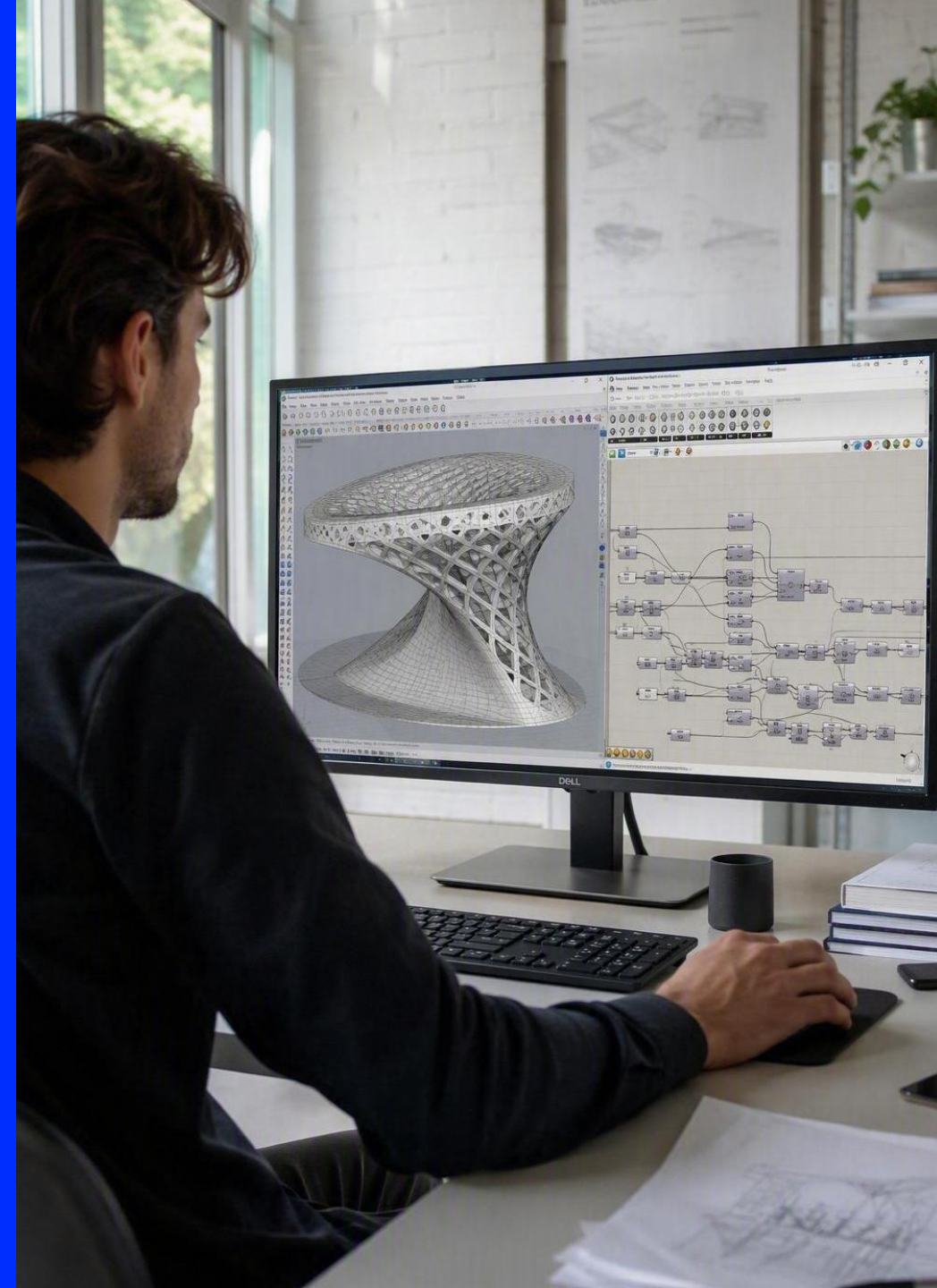
01 · COURSE OVERVIEW

Modern manufacturing

Five days hands-on with industry-standard CAD software and 3D-printing workflows. You will design, optimise, print and iterate a real part — leaving with a finished prototype and a portfolio-ready workflow you can use at work.

QUESTIONS OR BOOKINGS?

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02 · COURSE AT A GLANCE

Your five days

DAY 01

3D Modelling Fundamentals

DAY 02

Advanced CAD & Assembly

DAY 03

Design for Additive Manufacturing

DAY 04

3D Printing Operations

DAY 05

Prototyping & Production





DAY 01

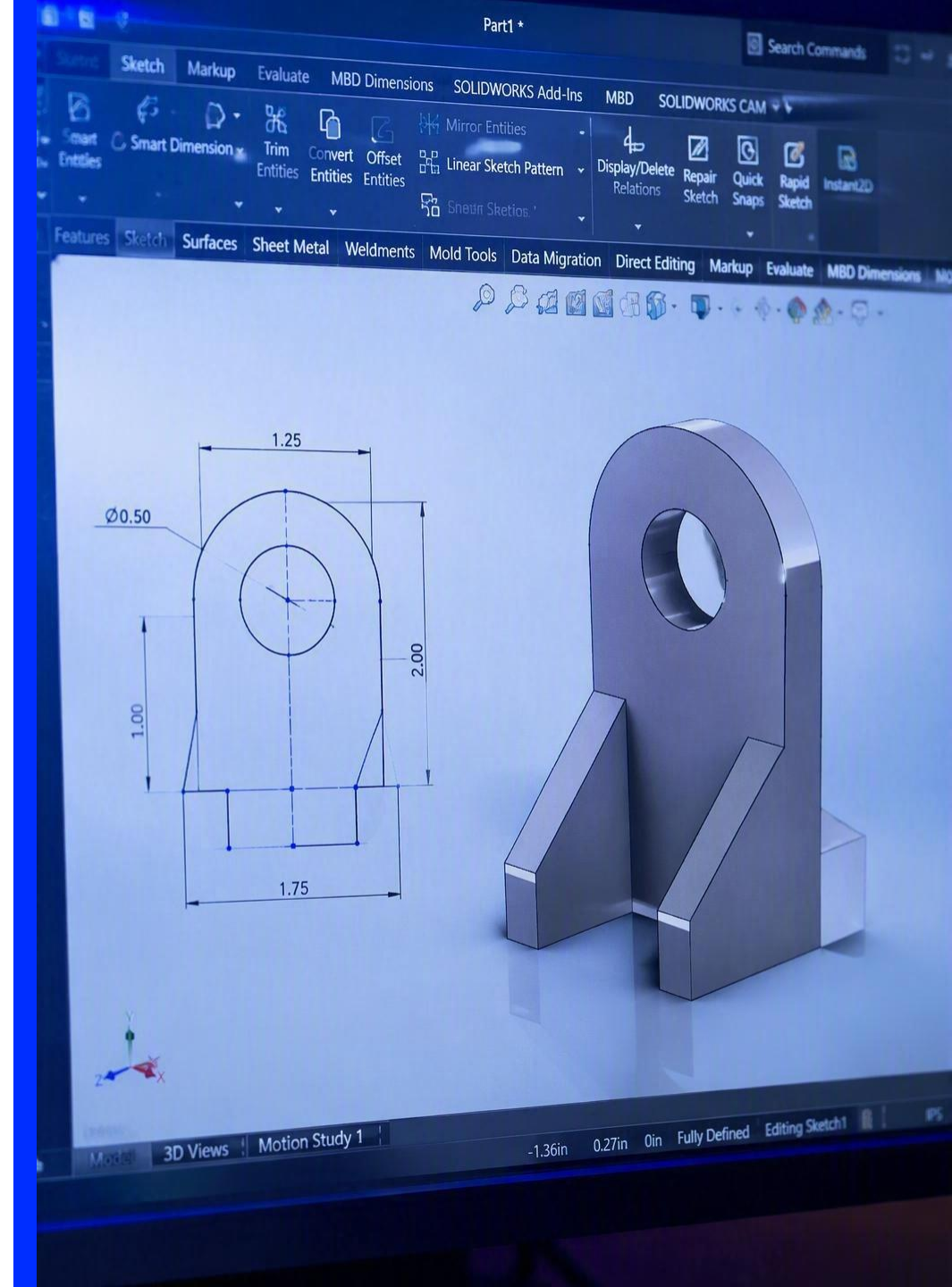
3D Modelling Fundamentals

Your first 3D model — understanding 3D space, sketching, extruding and basic solid modelling.

- 01 Introduction to 3D design
- 02 Fusion 360 interface & navigation
- 03 2D sketching in 3D space
- 04 Extrusions & revolves
- 05 Basic modifications (fillet, chamfer)
- 06 Design history & parametric modelling

LAB

Model a practical object from scratch in Fusion 360





DAY 02

Advanced CAD & Assembly

Multi-part assemblies, joints and the CAD skills that separate prototypers from professional designers.

01 Multi-body & component design

02 Assembly joints & constraints

03 Section analysis & interference

04 Pattern features

05 Sheet metal basics

06 Rendering & visualisation

LAB

Design and assemble a multi-component product





DAY 03

Design for Additive Manufacturing

Not everything designed in CAD prints well. Learn the rules, constraints and optimisations for successful 3D printing.

01 FDM, SLA, SLS process overview

02 Design rules for FDM printing

03 Support structures & overhangs

04 Wall thickness & infill

05 Tolerances & fit

06 Topology optimisation basics

LAB

Redesign a part specifically optimised for 3D printing





DAY 04

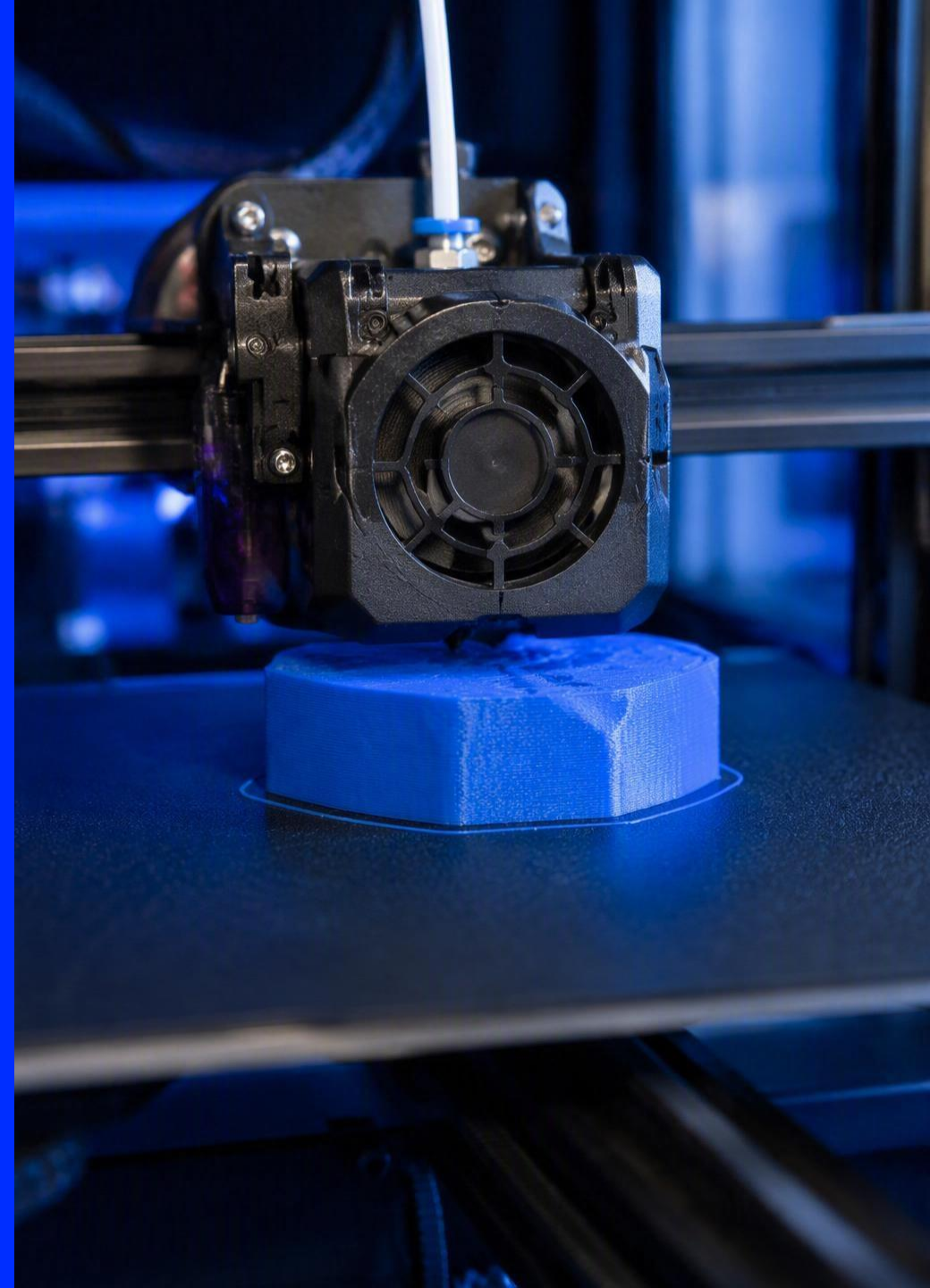
3D Printing Operations

Hands-on with real printers — slicing, materials, bed preparation, printing and troubleshooting.

- 01 Slicing software (Cura / PrusaSlicer)
- 02 Material selection (PLA, PETG, TPU)
- 03 Print settings & profiles
- 04 Bed adhesion & calibration
- 05 Print monitoring & troubleshooting
- 06 Post-processing (sanding, finishing)

LAB

Print your optimised design and iterate on the results





DAY 05

Prototyping & Production

From prototype to product — iterative design, costing, production planning and presenting your work.

- 01 Rapid prototyping workflows
- 02 Iterative design methodology
- 03 Cost analysis: additive vs traditional
- 04 Production planning
- 05 Quality control & inspection
- 06 Portfolio & presentation preparation

CAPSTONE

Present your complete design-to-prototype workflow





03 · WHO IT'S FOR

Who this course is for

1

IDEAL FOR
Engineers, technicians, makers and designers moving into modern manufacturing.

2

NO EXPERIENCE NEEDED
We start at the blank canvas — basic computer confidence is all you need.



04 · WHAT YOU TAKE AWAY

What you take away



1

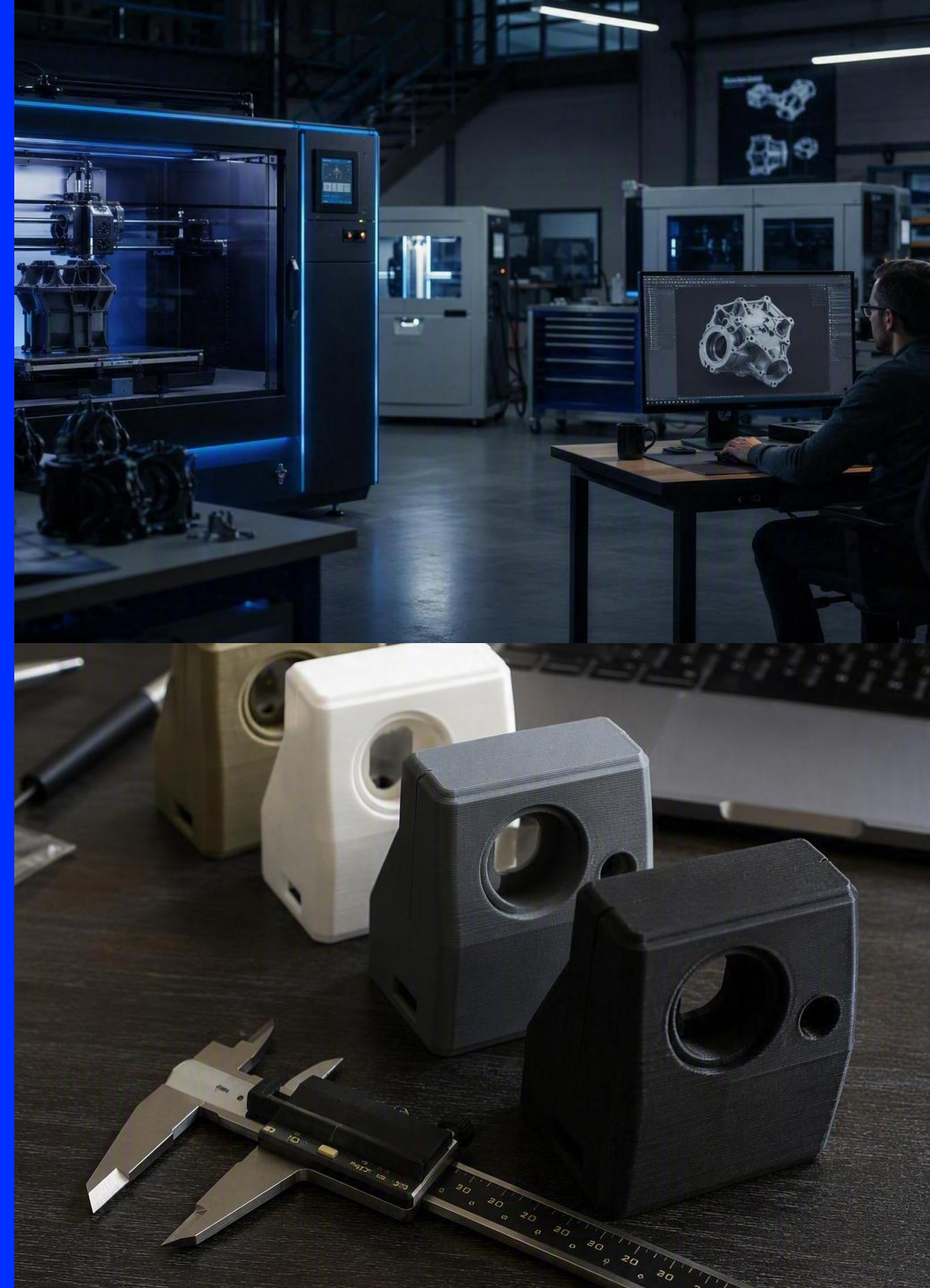
Working CAD skills in Fusion 360 — sketching, solids, assemblies and rendering.

2

A printed prototype of your own design, optimised for additive manufacturing.

3

A costed, repeatable design-to-production workflow and a portfolio piece.





05 · WHERE YOU'LL TRAIN

Where you'll train

Our workshop is inside the Main Entrance of Llynfi Enterprise Centre, with CAD workstations and printers ready for you.

CALL US

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SEE YOU SOON

Thank you
for choosing Reskill Wales

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