

TECHNICAL CURRICULUM · PRODUCT DESIGN & DIMENSIONAL METROLOGY · FULL-TIME

INDUSTRIAL DESIGN & DIMENSIONAL METROLOGY



A complete, workshop-based training programme.

CAD, dimensional metrology and 3D printing, from idea to validated product.

THE PROGRAMME

Good product design is no accident. This programme builds the skills for it, from the first sketch to measured precision.



Industrial Design & Dimensional Metrology is a workshop-based, full-time programme that combines creative product development with metrological precision.

Across twenty technical modules in six phases, trainees progress from technical drawing and CAD through materials and manufacturing to dimensional metrology, prototyping and quality assurance.

The focus is on practice throughout. Learning takes place at professional CAD workstations,

on precision metrology equipment and on 3D printers, along the complete cycle of design, construction, prototype, measurement and validation.

The programme is offered as a curriculum, as a matching equipment specification or as a turnkey package for the site.

20

TECHNICAL MODULES · M01-M20

1 years

FULL-TIME

60+

EQUIPMENT ITEMS

10+

WORKSTATIONS

18–24

PARTICIPANTS

TECHNICAL CURRICULUM

MODULE

M01 – M20 · SEQUENTIAL

Twenty modules.

From technical drawing and CAD through materials and manufacturing to dimensional metrology, prototyping and quality assurance, concluding with the final project.

M01 Occupational Safety & Metrology Room
FUNDAMENTALS

M02 Technical Drawing & Standards
FUNDAMENTALS

M03 Dimensioning, Tolerances & Fits
FUNDAMENTALS

M04 Sketching & Design Theory
FUNDAMENTALS

M05 2D CAD: Drawing Creation
CAD DESIGN

M06 3D CAD: Parametric Modelling
CAD DESIGN

M07 Assemblies & Drawing Derivation
CAD DESIGN

M08 Machine & Fastening Elements
CAD DESIGN

M09 Materials Science & Testing
MATERIALS & MANUFACTURING

M10 Manufacturing Processes & DFM
MATERIALS & MANUFACTURING

M11 CAD-CAM & Manufacturing Preparation
MATERIALS & MANUFACTURING

M12 Length Metrology & Measuring Tools
METROLOGY & GPS

M13 Form & Position Tolerancing (GD&T)
METROLOGY & GPS

M14 Surface & Roughness Measurement
METROLOGY & GPS

M15 Coordinate Metrology (CMM)
METROLOGY & GPS

M16 Measurement Uncertainty & Calibration
METROLOGY & GPS

M17 Additive Manufacturing & 3D Printing
PROTOTYPING

M18 Rapid Prototyping & Design Review
PROTOTYPING

M19 Reverse Engineering & QA
APPLICATION

M20 Final Project (Capstone)
APPLICATION

EQUIPMENT

From CAD to coordinate measuring machine.



01

CAD Workstations & Software

Licensed CAD workstations (TurboCAD), design and modelling environment.

02

Technical Drawing & Design

Drawing supplies and design teaching aids for standard-compliant representation.

03

Models & Machine Elements

Geometry and gear models, machine and fastening elements.

04

Precision Metrology

Calipers, dial gauges, height gauges, surface and tolerance metrology.

05

3D Printing & Prototyping

3D printers of several technologies for rapid prototyping.

06

Materials & Materials Testing

Material samples and tools for materials science and basic testing.

~60 ITEMS · 6 CATEGORIES

BRING THE PROGRAMME TO YOUR SITE

LET'S GET STARTED.

AVAILABLE AS • **Turnkey** (consulting + equipment + delivery + curriculum + setup)

