

PROFESSIONAL WORKSHOP PROGRAMME

Applied Plastic Part & Injection Mould Design

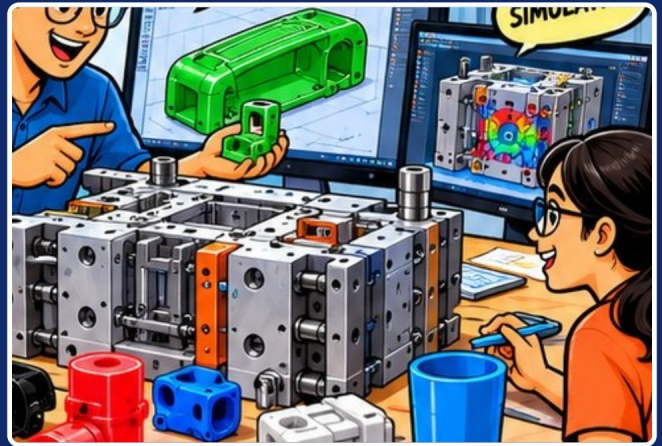
From concept to realistic applications.

Design plastic parts that mould right the first time, and the moulds that make them, through one integrated engineering workflow.

PART DESIGN

MOULD DESIGN

SIMULATION



DURATION

4 Months

12-16 weeks

LEARNING HOURS

150 Hours

learning & practical work

MODE

Live

online workshops

COHORT

Max 30

participants

BATCH #1 STARTS

15 November 2026

Inaugural fee • regular ₹39,900

₹9,900

01 / PROGRAMME OVERVIEW

One workflow, from polymer to production

Require-
mentsPolymer
selectionPart
designTooling
conceptsMould
design

Analysis

Validation

Mfg
readiness

Learn to design manufacturable plastic components and injection moulds step by step, combining industry-focused instruction with guided practical exercises and a portfolio capstone.

Who should attend?



Students & graduates

UG/PG in mechanical, production, manufacturing, polymer or related disciplines.



Working professionals

Product design, tooling, mould design, manufacturing, quality and supplier development.



Aspiring entrepreneurs

Seeking practical knowledge of plastic products and injection moulding.

Prerequisites: basic engineering drawing interpretation and familiarity with mechanical design. Prior CAD exposure is helpful.

What you will learn

- 01** Translate product needs into plastic-part **design requirements and DFM decisions**.
- 02** Understand polymer behaviour, **wall thickness, ribs, bosses, draft, undercuts and shrinkage**.
- 03** Develop mould concepts: **core/cavity, parting line, gates, runners, ejection and cooling**.
- 04** Interpret **mouldflow-style analysis** to reduce defects and improve design.
- 05** Review **tool materials, manufacturing processes, GD&T**, tolerances and quality.

02 / DETAILED CURRICULUM

Six modules, from part to production

MODULE 01

Plastic Part Design Fundamentals

- Polymer materials, properties and selection
- Wall thickness, draft, ribs, bosses, snap fits and undercuts
- Shrinkage, tolerances, surface finish and DFM guidelines

You produce: part design checklist and annotated part concept.

MODULE 02

Product Design for Moulding

- Interpreting product requirements and manufacturability
- Design reviews and case studies
- Part redesign to address moulding constraints

You produce: before/after part-design review.

MODULE 03

Injection Mould Design

- Mould types, core and cavity, parting line
- Gate and runner layout, sprue and venting
- Cooling circuits, slides, lifters and ejection mechanisms

You produce: conceptual mould layout and design rationale.

MODULE 04

Analysis & Validation

- Flow, fill, packing and cooling fundamentals
- Warpage, sink marks, weld lines and defect prevention
- Design optimization and validation planning

You produce: analysis interpretation and improvement recommendations.

MODULE 05

Manufacturing & Tooling

- Tool steels and mould components
- Machining, EDM, polishing and mould assembly
- Process parameters, trial runs and tool maintenance

You produce: tooling process plan and trial checklist.

MODULE 06

Standards & Global Practices

- GD&T, tolerance stack-up and inspection planning
- DME / HASCO catalogue awareness and standard components
- Documentation, quality reviews and release readiness

You produce: final design-review package and checklist.

03 / TEACHING PEDAGOGY & DELIVERY

150 hours, built around doing

Seventy per cent of your time goes into guided practice and project work on real parts and moulds.



How the 150 learning hours are shared

Concepts & demonstrations 30 hrs Instructor-led technical foundations, live design demonstrations and Q&A.	Guided practice 60 hrs CAD-based part design, tooling layouts, DFM reviews and problem-solving exercises.
Project development 45 hrs A team or individual plastic-part and injection-mould concept project.	Reviews & presentation 15 hrs Design reviews, feedback, final presentation and portfolio documentation.

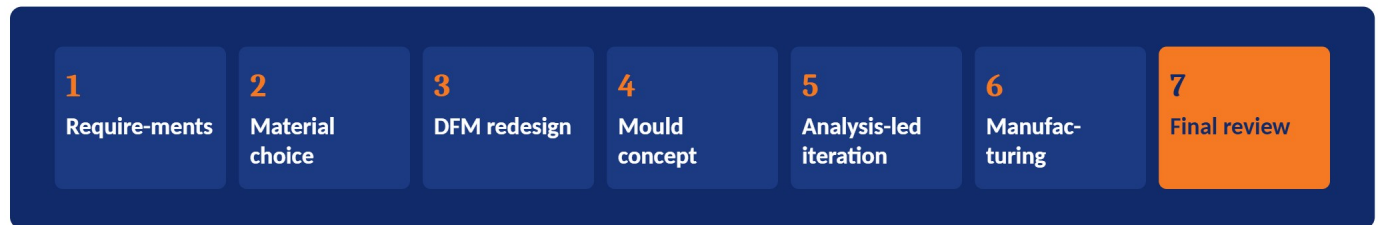
A TYPICAL LIVE WORKSHOP

- | | | | | |
|----------------------------|-----------------------------------|--------------------------------|-----------------------------------|-------------------------|
| 1 | 2 | 3 | 4 | 5 |
| Pre-session context | Expert explanation | Guided practice | Peer & expert review | Weekly milestone |
| Short reading or demo | Industrial drawings and standards | Sample parts and mould layouts | Technical discussion and feedback | Assignment to apply it |

04 / CAPSTONE PROJECT

From part concept to mould-ready design

Pick a representative plastic product, such as an enclosure, bracket or consumer component, and take it all the way through:



Your portfolio outputs



Assessment & certification



A programme completion certificate is awarded on meeting the attendance, participation and assessment requirements.

Design the part. Design the mould.

Batch #1 is limited to 30 participants. Reserve your seat at the inaugural fee.

BATCH #1 STARTS

15 Nov 2026

FORMAT

4 months • 150 hours
Live online • Max 30

INAUGURAL FEE • ~75% OFF

₹9,900

Regular fee ₹39,900

ENQUIRIES & ENROLMENT



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THE ACADEMY OF INNOVATION AND DESIGN, HYDERABAD



Please note: workshop hours, assessment weightings, software licence or hardware requirements, recordings policy and certificate criteria will be confirmed by the programme team before enrolment.