



MANUFACTURING AND PRODUCTION

Injection Moulding Process Optimisation and Defect Diagnosis

3 day course

Classroom, online or in-house

Course overview

A moulding machine has enough adjustable settings that a technician can always make a defect go away and rarely knows which change fixed it, so the same fault returns on the next shift. This course replaces that with method. Delegates work through the moulding cycle and what physically happens in each phase, then through scientific moulding: the separation of fill, pack and hold and the studies that establish each independently. Viscosity curves, cavity balance and gate seal studies are worked through. Melt and mould temperature effects are covered, alongside screw recovery and back pressure. Defects are diagnosed systematically rather than by adjustment: short shots, flash, sink marks, warpage, weld lines, burn marks, splay and dimensional drift, each traced to its actual cause. Cycle time reduction is addressed without sacrificing quality. Process windows and documentation follow. The course closes on process monitoring and on validating a mould at start up.

What you will learn

- Explain what happens physically in each phase of the moulding cycle
- Separate fill, pack and hold and establish each independently
- Run viscosity, cavity balance and gate seal studies
- Set melt and mould temperature, screw recovery and back pressure deliberately
- Trace short shots, sink, warpage, weld lines and splay to real causes
- Reduce cycle time without losing quality
- Define a process window, document it and validate a mould at start up

Who should attend

- Injection moulding setters and technicians
- Process engineers in plastics conversion
- Production supervisors on moulding floors
- Quality staff investigating moulding defects
- Toolroom staff supporting moulding trials

Course outline

- 01 Making a defect go away without knowing why
- 02 The moulding cycle phase by phase
- 03 Fill, pack and hold separated
- 04 Viscosity and cavity balance studies
- 05 Gate seal and holding pressure
- 06 Melt, mould temperature and screw recovery
- 07 Systematic defect diagnosis
- 08 Cycle time, process windows and start up validation

Upcoming dates



Dates	Venue	Format	Fee per delegate
7 to 9 December 2026	Cape Town, South Africa	Classroom	R14,950
4 to 6 January 2027	Harare, Zimbabwe	Classroom	USD 995
1 to 3 February 2027	Online	Online	R6,500

Fees and how to register

This 3 day course is **R6,500** per delegate online, **R14,950** in the classroom in South Africa, Botswana, Namibia, Lesotho and Eswatini, and **USD 995** in the classroom elsewhere in Africa. In-house training is quotation on request. Book 2 or more delegates on this course and save 10%.

To register or request an in-house proposal, visit www.afrisciencegroup.com, email info@afriScience.co.za, or WhatsApp us on **+27 63 479 1136**.

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