

PEPL5302 **FUNDAMENTALS OF PLASTICS MOULD / DIE**

DESIGN (3-0-0)

Module I Product Design

(12 hour)

Orthographic projection-Projection of solids—vertical and horizontal surfaces-Inclined Surfaces-Curved Surfaces-Sectional views and assembly drawing.

Basic Principles-Shrinkage-Flash lines-Undercuts-suggested Wall thickness-Draft-Tolerance-Moulded holes-threads-radius- moulded hinges-integral hinge-snap fits - product design thumb rules - case studies and product design.

Module II Mould Design

(12 hour)

Parting line-Construction of core and cavity-types of gate-types of ejection-Mould temperature control - cooling - Mould alignment Mould ancillary parts.

Types of moulds-two plate - three plate - split moulds - Machine selection-Principles of shrinkage allowances-materials for mould parts-life of mould-mould maintenance-case studies on mould design. Injection Moulds for threaded components – automatic unscrewing – various unscrewing methods

Module III Screw Design

(11 hour)

Extrusion die design—Construction features of an extruder, Process, Characteristics of Polymer melt, Die geometry, Die head Pressure, characteristics of land length to Profile thickness, Extrudate die swell, Die materials, Classification of dies-Dies for Solid Section, Dies for Hollow Profiles, Blown film dies, Flat film dies, Parison dies, Wire and cable Coating dies, Spiral mandrel die, Fish tail die, Adjustable Core die

Total Lectures = 35

Text Books

1. Injection Mould Design for Thermoplastic - By Pye, R.G.W
2. Injection Mould & Molding - By Dym
3. Injection Moulds – 130 Proven Design - By Gastrow, H
4. Plastics Product Design Engineering Hand Book - By Dubois, H
5. Plastics Product Design & Process Engineering - By Belofsky, Harold
6. Laszlo Sors and Imre Balazs, "Design of Plastics Moulds and Dies", Elsevier, Amsterdam - Oxford – Tokyo - NY, 1989.

Reference Books

1. Plastic Design & Processing - By Sharma, S.C
2. Plastics Moulds & Dies - By Sors, & Others
3. Injection Mould Design Fundamentals (Vol. I & II) - By Glanvill & Denton