Elective Group IV

FUNDAMENTALS OF PRODUCT AND MOULD DESIGN

UNIT I

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

UNIT II

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.

UNIT III

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

UNIT IV

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. Extrusion - extruder parts - extrusion screw - design features - design variables. Injection Moulds for threaded components – automatic unscrewing – various unscrewing methods

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.
4. Injection Mould -By VDI.
5. Injection Mould Design for Thermoplastic - By Pye, R.G.W.
6. Injection Mould & Molding - By Dym.
7. Injection Moulds – 130 Proven Design - By Gastrow, H.
8. Plastics Product Design Engineering Hand Book - By Dubois, H.
9. Plastics Product Design & Process Engineering - By Belofsky, Harold