

5th SEMESTER

MOULDS & DIES DESIGN - II

CO-1 → To acquire the knowledge of Compression mould design.

LO-1 → To study the Compression Mould Design.

CONTENT → Introduction & definition of terms.

- Types of compression mould.
- Types of loading chamber.
- Bulk factor, flash thickness & allowances.

Method of Assessment → External

LO-2 → To understand the basic terminology for compression mould.

CONTENT → Calculations for —

- (i) Projected area
 - (ii) Powder well
 - (iii) Pressure pad size
 - (iv) Compression pressure
 - (v) Clamping force.
 - (vi) Number of impressions.
- Factors affecting compression moulding
 - Heating systems for compression moulds.

Method of Assessment → Internal → Test-1

CO-2 → To impart the knowledge of Transfer mould design.

LO3 → To study the transfer mould design.

CONTENT → Introduction & definition of terms.
Types of Transfer moulds.
Material selection of transfer mould

Method of Assessment → External

LO-4 → To study the design features of Transfer mould.

CONTENT → Calculations for —

- (i) Transfer pot
- (ii) Transfer pressure
- (iii) Clamping Force
- Design of feed system (Sprue, runner & gate)
- Advantages & disadvantages of transfer moulds over compression moulds.

Method of Assessment → External

CO-3 → To acquire the knowledge of Blow mould design.

LO-5 → To study the various types of Blow moulds.

CONTENT → Introduction & definition of terms.
- Types of Blow moulds.
- Blow up ratio
- Cycle time

Method of Assessment → External

LO-6 → To understand the basic terminology of Blow moulds.

CONTENT → Mould cavity design

- Parting line
- Surface finish
- Clamping force & mould clamping
- Mould venting
- Mould cooling
- Shrinkage
- Mould wall thickness control

Method of Assessment → External

CO-4 → To impart the knowledge of ~~mould design~~ product design.

~~CONTENT~~ → ~~Technical requirements for product design.~~

LO-7 → To introduce the basic knowledge of product design.

CONTENT → - Technical requirements for product design

- Preliminary design consideration
- Texturing.

Method of Assessment → Internal → Test-2

LO-8 → To understand the basic terminology of product design.

CONTENT → - Positioning of holes.

- Ribs & bosses
- Fillets & rounds.
- Draft & taper
- Weld lines

Method of Assessment → External

LO-9 → To study the product design features.

CONTENT → - Optimum gate size & location

- Moulded inserts.
- Internal & External undercuts.
- Tolerance
- Functional surface & jetting.

Method of Assessment → External

CO-5 → To impart the knowledge of CAD/CAM/CAE application in mould design.

LO-10 → To understand the Computer Aided Design ~~ap~~ [CAD] applications.

CONTENT → - Basic concepts of Computer Aided Design [CAD]

- CAD & CADD systems.
- Shape & size distribution
- Parametric programming

Method of Assessment → External

LO-11 → To understand the construction of engineering drawing.

CONTENT → - Construction of Engineering drawing.

(i) Two dimensional drawing

(ii) Three dimensional surface & solid modelling.

- NC part programming

- CNC machining control systems.

- CIM, FMS, NC, CNC & DNC systems.

Method of Assessment → External

LO-12 → To understand the CAD/CAM/CAE software system.

CONTENT → Introduction to CAD/CAM software system.

- Computer Aided Engineering (CAE)

(i) Finite Element Analysis (FEA)

(ii) Use of FEA for flow, thermal & pressure.

Method of Assessment → Internal → Assignment.

MOULDS & DIES DESIGN-II

LIST OF PRACTICAL

- ① Designing & drawing details & assembly of compression mould.
- ② Fabrication of Compression mould.
- ③ Designing & drawing details & assembly of Transfer mould.
- ④ Fabrication of Transfer mould.
- ⑤ Design & draw assembly drawing of Blow moulds.
- ⑥ Fabrication of Blow mould.