

<b>6<sup>th</sup> Semester</b>	<b>Advanced Plastics Processing Techniques</b>	<b>L-T-P 3-0-0</b>	<b>3 Credits</b>
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**Module I****(10 Hours)****Specialized Injection Moulding Processes**

Thin wall product moulding-multi material and multi colour moulding-sandwich moulding-thermoset injection moulding. Micro Processor Controlled Injection moulding operation. Statistical quality control and process control. All electric injection moulding - Merits & Demerits, Gas Assist Moulding, Water Assist moulding, Reaction Injection moulding, Liquid Injection Moulding, Lost Core moulding, Thermoset Injection moulding, Structural foam moulding: a) Low pressure Foam b) High pressure Foam, Reaction Transfer Moulding, Metal/Ceramic Powder Moulding.

**Module - II****(8 Hours)****Advanced Blow Moulding**

Classification of Advanced Blow Moulding Process, Deep draw Double Wall Blow Moulding, Press Blow Moulding, Stretch Blow Moulding – Injection Stretch Blow Moulding, Extrusion Stretch Blow Moulding Merits & Demerits.

**Module – III****(7 Hours)****Advanced Extrusion**

Profile Extrusion Process, Multi layer film, Co- extruder Sheets & Pipes, – Process, Process Control, Process Optimization, Application, Merits & Demerits

**Module – IV****(9 Hours)****Secondary Processes**

Machining & Joining of Plastics - Importance of machining –machining methods-joining-welding of plastics- Adhesive Bonding- Mechanical fasteners.

Other Secondary Processes-printing, painting, Hot stamping, In mould decoration, Electro-plating and vacuum metalizing.

**Module - V****(9 Hours)****Casting and coating**

Introduction – casting processes-operation and control of casting processes- plastisol processing.

Coating Process - Introduction-coating methods- process and applications

Cellular plastics - Introduction- foaming processes -foam moulding- RIM Casting foams, steam chest moulding structural foam moulding–applications-foamed extrusion.

**Books**

1. Plastic Engineering Hand Book & D – 5 - By Society of Plastic Industry Inc.
2. Plastics Material & Processing- By Strong, A, Brent
3. Cheremisinoff; Nicholas P. and Cheremisinoff; Paul N. (Eds.), Handbook of Applied Polymer Processing Technology, Marcel Dekker Inc., New York (1996)
4. Plastics Materials & Processing - By Schwartz & Goodman Thermoforming - By James & Throne
5. Welding of Plastics - By New Man
6. Calendaring of Plastics - By Elden & Swan