

Course Number and Name													
BME002 - SPECIAL CASTING PROCESSES													
Credits and Contact Hours													
3&45													
Course Coordinator's Name													
Mr.V.P.Durai Raj													
Text Books and References													
REFERENCES :													
1. P.L. Jain, Foundry Technology, 1992.													
2. R.A.Higgins, Engineering Metallurgy – Vol. II, 1998.													
3. phindia.com/.../casting-technology-and-cast-alloys-chakrabarti-a-k--isbn .													
Course Description													
Understand the concepts of molding and casting													
Prerequisites							Co-requisites						
MANUFACTURING TECHNOLOGY I							MANUFACTURING TECHNOLOGY II						
required, elective, or selected elective (as per Table 5-1)													
Core Elective													
Course Outcomes (COs)													
CO1	understand and perform basic casting processes .												
CO2	Understand shell moulding process												
CO3	Study about Investment casting												
CO4	Understand centrifugal casting												
CO5	Study about Continous casting												
CO6	Study about Full mould process												
Student Outcomes (SOs) from Criterion 3 covered by this Course													
COs/SOs	a	b	c	d	e	f	g	h	i	j	k	l	
CO1								M			L		
CO2			H				M	H	H		L	L	
CO3			H	H	M		M			L	L		
CO4					M		M		M		L	H	
CO5					M							H	
CO6						M	H	M				L	
List of Topics Covered													

UNIT I INTRODUCTION**7**

Sand casting-Conventional mould-Core making-Need for special casting process-Applications

UNIT II SHELL MOULDING**8**

Process-Machines-Pattern-Sand , resin and other materials – Process parameters – Characteristics of shell mould casting-‘D’ Process – Applications

UNIT III INVESTMENT CASTING**9**

Process- Pattern and mold materials – Black mold and ceramic shell mold - Mere Cast and Shaw process – Applications.

UNIT IV CENTRIFUGAL AND DIE CASTING**9**

Types of centrifugal process – calculation of rotating speed of mold – Equipment – Applications.

UNIT V CONTINUOUS CASTING, CO₂ MOULD PROCESS AND FULL MOULD PROCESSES**12**

Reciprocating continuous mould process – Direct chill process – Use of steel, Aluminum, brass material in continuous casting. CO₂ Mould / Core hardening process – Principle of full Mould process – Applications , Special processes like Squeeze casting and eletroslag casting processes.