

LESSON PLAN FOR ACADEMIC SESSION: 2026-27 (WINTER)

Discipline: Metallurgical Engineering	Semester : 5th	Name of the Teaching Faculty : Arpita Jena
Subject : Foundry Technology	No. of days / week class allotted : 03	Semester From : 20/07/2026 to 05/11/2026 Nos. of Weeks per semester : 15
Week	Class Day	Theory Topics
1 ST	1 st	Introduction to Foundry Technology Definition, Scope, and Applications of Foundry Technology,
	2 nd	principles of casting , basic steps involved in making a casting
	3 rd	advantages &disadvantages of metal casting
2 ND	1 st	different types of pattern and different pattern materials
	2 nd	different types of pattern allowances
	3 rd	Foundry Materials & Testing of moulding sand
3 RD	1 st	Types of moulding sand , classification of moulding sand based upon grain size & grain shape
	2 nd	, properties desired for moulding sand , facing sand and backing sand , Testing of moulding sand (moisture content test of molding sand
	3 rd	AFS grain fineness number of moulding sand , clay content test of moulding sand
4 TH	1 st	clay content test of moulding sand , mould hardness test, permeability number of moulding sand, compression strength of moulding sand
	2 nd	functions of binder & types of binders , Discuss on core , different functions of core & essential characteristics of core
	3 rd	Revision
5 TH	1 st	Methods of Pouring and Feeding Melting Practice, Special Casting Techniques
	2 nd	Gating system , function of riser & different types of riser , importance of size and shape of riser in metal casting ,
	3 rd	directional solidification , Chvorinov's rule , the construction and operation of cupola used for cast iron melting
6 TH	1 st	Gravity die casting , Pressure die casting ,Cold chamber process
	2 nd	, Pressure die casting ,Cold chamber process , Hot chamber process, True centrifugal casting
	3 rd	Application Areas of Various Casting Methods
7 TH	1 st	Casting Defects Foundry Automation and Modern Trends
	2 nd	Casting Defects Foundry Automation and Modern Trends
	3 rd	Types of casting defects with their remedies
8 TH	1 st	, Blow holes ,Pin Holes , Hot tears , Shrinkage defects , Misrun , Coldshut , Porosity , Swell , warpage
	2 nd	, Blow holes ,Pin Holes , Hot tears , Shrinkage defects , Misrun , Coldshut , Porosity , Swell , warpage

	3 rd	Revise
9 TH	1 st	Class Test
	2 nd	Industrial process using heavy liquid
	3 rd	Automation in Foundries
10 TH	1 st	CNC Machines in Pattern Making
	2 nd	Automated Sand Mixing and Moulding Machines
	3 rd	Advanced Casting Techniques
11 TH	1 st	Rapid Prototyping and 3D Printing for Foundries
	2 nd	Rapid Prototyping and 3D Printing for Foundries
	3 rd	Thin Wall Casting, Single-crystal casting
12 th	1 st	Thin Wall Casting, Single-crystal casting
	2 nd	Revise
	3 rd	Revision
13 th	1 st	Class test
	2 nd	Thin Wall Casting, Single-crystal casting
	3 rd	Class Test
14 th	1 st	Revision
	2 nd	Rapid Prototyping and 3D Printing for Foundries
	3 rd	Rapid Prototyping and 3D Printing for Foundries
15 th	1 st	Microwave-Assisted Comminution, Advanced Gravity Separation Techniques: Multi-Gravity Separator (MGS)
	2 nd	Automated Sand Mixing and Moulding Machines
	3 rd	Class test
		Revision

Prepared by
ARPITA JENA

Arpit
29/7/26

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20/07/26
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20.07.26
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