

GOVERNMENT POLYTECHNIC JAIPUR

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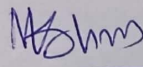
DEPARTMENT OF METALLURGICAL ENGINEERING

LESSON PLAN

Discipline: metallurgy	Semester:	Name of the Teaching faculty: Er. Ashok kumar mishra (HOD Metallurgy)		
Subject: Steel making	5th semester	Semester : 5th	Dt. Of class start 1.08.2023	Session: Winter
		No of weeks: 15		
Week	Class Day	Topics		
1st	1st	Brief history of principle of steel making.		
	2nd	Brief history of processes of steel making		
	3rd	Students able to know Shear and crucible steel making process		
	4th	Blister steel making		
2nd	1st	Explain bessemer steel making processes		
	2nd	Advantage and disadvantages of bessemer steel making processes		
	3rd	Explain open hearth steel making processes with neat sketches		
	4th	mention different reactions involved in steel making		
3rd	1st	Differentiate between acid process and basic process of steel		
	2nd	Explain the principles and condition required in removal of P,S,Si,,Mn and c in steel making		
	3rd	List the different raw material required for steel making		
	4th	State the important rawmaterials available in india		
4th	1st	Doubt clearing class & class test		
	2nd	Study about different raw materials required for making LD process		
	3rd	Eplain construction of LD convertor		
	4th	Explain the operation of LD convertor		
5th	1st	Describe refining reaction in LD covertor with reference to decarburisation		
	2nd	Describe refining reaction in LD covertor with reference to dephosphorisation		
	3rd	study about quality of steel and composition of slag in LD process.		
	4th	Doubt clearing class		
6th	1st	Advantages and limitation of LD process.		
	2nd	Different developement of LD process		
	3rd	Bottom, top and combined blowing		
	4th	Bottom, top and combined blowing		
7th	1st	Multi nozzle converter and OLP process		
	2nd	Explain the principle and types of slags prepared by electric arc furnace		
	3th	Explain the steps of electric arc furnace heating to produce steel		
	4th	Mention the advantages of electric arc furnace process.		
	1st	Explain the steel making in induction furnace		

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8th	2nd	Mention advantages and limitations of induction furnace process.
	3rd	Describe the principle of operation, merits and demerits of Ajax process
	4th	Describe the principle of operation, merits and demerits of OBM process
9th	1st	Describe the principle of operation, merits and demerits of spray steel making process
	2nd	internal assesment
	3rd	Explain different de-oxidiser and their uses
	4th	Differentiate between killed steel, semi killed steel and rimming steel
10 th	1st	Describe teeming methods, direct pouring and tundish teeming
	2nd	Describe teeming methods, bottom teeming
	3rd	describe different ingot defect
	4th	Ingot defect and their causes and remedies
11th	1st	Ingot defect and their causes and remedies
	2nd	Explain the principle of continous casting
	3rd	Explain the principle of continous casting
	4th	Explain the operation of continous casting
12th	1st	Explain the operation of continous casting
	2nd	Desribe different types caster
	3rd	Desribe different types caster
	4th	Describe about the moulds and mould maintance in continous casting
13th	1st	Describe about the moulds and mould maintance in continous casting
	2nd	Discuss advantages of continous casting
	3rd	Continous casting of billets, blooms and slabs
	4th	Continous casting of billets, blooms and slabs
14th	1st	Class test
	2nd	Explain the principle of secondary steel making
	3rd	Explain the principle of secondary steel making
	4th	Explain the operation secondary steel making
15th	1st	Explain the advantages of secondary steel making
	2nd	Explain the principle and operation of VAD process
	3rd	Explain the principle and operation of VOD & AOD process
	4th	Describe the stream degassing process


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