

**GOVERNMENT POLYTECHNIC JAIPUR**  
**A/ P: Ragadi, Block: Korei, Dist.: Jajpur, Odisha- 755019**  
**Website: <https://www.gpjajpur.org>**


**DEPARTMENT OF METALLURGICAL ENGINEERING**  
**LESSON PLAN**

Discipline: metallurgy	Semester:	Name of the Teaching faculty: Er. Ashok kumar mishra M.TECH.
Subject: Steel making	5th semester	Semester : 5th Session: Winter No of weeks: 15
Week	Class Day	Topic
1st	1st	Brief history of principle of steel making.
	2nd	Brief history of processes of steel making
	3rd	Shear and crucible steel making
	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
	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 convertor with reference to decarburisation
	2nd	Describe refining reaction in LD convertor 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	<i>Different devlopement of LD process</i>
	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
		Continous casting of billets, blooms and slabs
	3rd	Continous casting of billets, blooms and slabs
4th	Class test	
14th	1st	Explain the principle of secondary steel making
	2nd	Explain the principle of secondary steel making
	3rd	Explain the operation 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

  
 11/7/24  
 HoD (Metallurgy)