

PADMASHREE KRUTARTHA ACHARYA INSTITUTE OF ENGINEERING & TECHNOLOGY, BARGARH



LESSON PLAN Session-2023-2024

Discipline: Metallurgical Engg. Semester: 5th

Subject: F.M-II

Name of the Teaching Faculty: Anadi Charan Jena

Subject: FM-11 No. of Days/per week class allotted 04

Semester From Date: 1.8.23 To Date: 30.11.23 No. of Weeks: 16

Week	Class Day	Theory /Practical Topics
1st	1st Topic-1	History of steelmaking processes, Blast steelmaking
	2nd	Shear, Conible, Bessemer steelmaking processes :
	3rd	Open hearth steelmaking process, principles
	4th	General reactions in steelmaking process.
2nd	1st	Acid and Basic steelmaking process.
8	2nd	Carbon reactions, conditions of decarburisation
	3rd	Sulphur reactions, principles, conditions :
	4th	Manganese reactions, conditions of removal
3 rd	1st	Silicon reactions, desilicification.
	2nd	Dephosphorisation, conditions of phosphorus removal
	3rd Topic-2	Raw materials for steel making
	4th	List of raw materials, Pig iron, scrap etc. :


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Week	Class Day	Theory /Practical Topics
4 th	1 st	Raw materials available in India
	2 nd Topic-3	LD process, General principles
	3 rd	Raw materials for LD process of steel making
	4 th	Construction of LD vessel
5 th	1 st	Operation of LD process
	2 nd	Reactions in LD converter
	3 rd	Carbon, Sulphur, Mn, Si, P, reactions
	4 th	Composition and quality of LD steel
6 th	1 st	Advantages and Limitations of LD process
	2 nd	Development of LD process
	3 rd	OBP process
	4 th	Combined blowing process


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Week	Class Day	Theory /Practical Topics
7th	1st	Comparison between top and bottom blowing
	2nd Topic-4	Principles, Electric furnace steel making
	3rd	Steps in EAF Practice
	4th	Adv. & disadv. of EAF steel making
8th	1st	Induction furnace, Principles
	2nd	Advantages and Limitations of Induction process
	3rd Topic-5	Recent steel making process, General principle
	4th	Ajax Process, Principle
9th	1st	Merits and Demerits of Ajax process
	2nd	OBM process
	3rd	Merits & Demerits of OBM Process
	4th	Spray steel making process.


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9th	1st	Merits and Demerits of Ajax Process
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	3rd	Merits & Demerits of OBM Process
	4th	Spray steel making process.


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Week	Class Day	Theory /Practical Topics
0th	1st Topic-6	Deoxidation practice, Principle of deoxidation
	2nd	Decarburizers and Deoxidizers, uses of deoxidizers.
	3rd	Killed and semi-killed steels
	4th	Rimming steel, Difference between them
11th	1st Topic-7	Pit side practice, Teeming methods
	2nd	Direct teeming, adv & disadv.
	3rd	Tundish teeming, bottom teeming
	4th	Ingot defects and their control
12th	1st Topic-8	Continuous casting of steel
	2nd	Principle and operation of continuous casting
	3rd	Types of continuous casters
	4th	Horizontal type, S-type casters.

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Signature of the Faculty