

**Coordinators**

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Syllabus**References****COURSE OUTLINE**

This subject will provide you with the relevant knowledge that is necessary to any Metallurgist, Materials/Chemical engineer to pursue the higher levels of study. The course develops the student's understanding of ironmaking through a learning progression beginning with introduction of iron making blast furnace and ending with the brief description of alternative route of iron making. Thus, the subject deals with the description of raw materials and agglomeration along with their properties. This follows with the charging of materials in the blast furnace, which leads to the description of various physico-chemical phenomena along with transport processes that are occurring in the various zones of a blast furnace. Further it discusses about the productivity and irregularities aspects of the blast furnace along with the environmental impact and carbon capturing. Finally, the course ends with a brief overview of the various processes which are emerging out to produce iron.

COURSE DETAIL

Week	Topics
1.	◆ Introduction to Iron Making, Raw Materials
2.	Materials preparation and properties, Agglomeration: Pelletisation & Induration
3.	Agglomeration: Sintering and Transport processes in a blast furnace: Temperature, ◆ Burden Distribution
4.	Transport processes in a blast furnace: Aerodynamics of Blast Furnace
5.	Transport processes in a blast furnace: Description of physical and chemical processes in the upper zones of a blast furnace.
6.	Transport processes in a blast furnace: Description of physical and chemical processes in the lower zones of a blast furnace (dropping, raceway and hearth zones)
7.	Productivity of the blast furnace, Irregularities and process control in the blast furnace
8.	Environmental issues related to ironmaking, A brief description of alternative route of iron making

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