Metallurgical and Materials Engineering Department

N.I.T. Srinagar, Hazratbal, Srinagar,

Semester: 5th

Subject: Extractive Metallurgy of Iron and Ferroalloy

Text Books

1. Principles of Blast Furnace Iron Making – **Anil K. Biswas**
2. Iron Making – **R.H. Tupkary**
3. Iron Making and Steel Making – **AhindraGhosh, AmitChaterjee**
4. Hot Metal Production by Smelting, Smelting reduction of Iron Oxide **- AmitChaterjee**
5. Principles of Iron Making, Steel Making – **G.R. Bashforth**

Minor I

Physico-chemical principles of iron oxide reduction major steel plants in India, Ergun equation for packed bed reactor model. Rist diagram, De-Sulphurisation, Removal C,Si,Mn etc. slag theory and calculations.

Tutorial sheet I

Minor II

Aerodynamics of blast furnace, heat and material balance, recent development and modern practice in blast furnace, iron making efficiency, productivity and thermal zone,

Tutorial sheet II

End Term

Alternative methods of iron making

- DRI
- Sponge Iron and Hot Briquetted Iron (HBI)
- Degree of Reduction and Degree of Metallization
- Rotary Kiln, Vertical Kiln, Shaft submerged electric arc furnace.
- Principles of Ferro alloy making, Fe-Cr, Fe-Mn, Fe-Si

Numericals

Email – dmafzal@gmail.com