

SYLLABUS :-

Expt. No. Titles of Experiments  
1 Experimental determination of a binary phase diagram.  
2 Solid state amorphization and crystallization.  
3 Solidification microstructure and solid state phase changes effected by cooling rates and related microstructural evolution in  $\alpha$ -brass (Cu-30 wt percent Zn alloy) and Al Bronze (Cu-11 wt percent Al alloy).  
4 Study on mechanism and kinetics of grain coarsening.  
5 Microstructural features of discontinuous precipitation and coarsening.  
6 Determination of boundary diffusion coefficient and Arrhenius parameters.  
7 Annealing and normalizing of plain carbon steel.  
8 Hardening and tempering of steel.  
9 Microstructural features of selected grades of hardened steel.  
10 Jominy end-quench hardenability test.  
11 Carburising and heat treatment of carburised steel.