

SYLLABUS :-

Prerequisite - NilIntroduction: Sources of failures; Description and origin of processing defects: metal working defects, casting defects, heat treatment defects and weld defects; Toughness, ductile brittle transition and fracture mechanics; Types of failure: ductile and brittle, fatigue, creep and environment assisted; Macroscopic and microscopic fracture surface analysis to characterize the mechanism and origin of failure; Overview of mechanical test parameters and non-destructive testing; Generalized procedure for analysis of common failures; Case histories.Text Books: 1.V. J. Collangelo and F.A. Heiser : Analysis of metallurgical failures, John Wiley, NY, 1989.2.Metals Handbook, 8th Ed, Vol 10, ASM, Metals Park, Ohio, 1975.