

1.	Title of the course	Wave Propagation in Solids
2.	Course number	ME605L
3.	Structure of credits	3-0-0-3
4.	Offered to	PG
5.	New course/modification to	Modification To ME6024/11
6.	To be offered by	Department of Mechanical Engineering
7.	To take effect from	July 2022
8.	Prerequisite	CoT
9.	Course Objective(s): To study how solids respond under dynamic loadings which solids often encounter in non-destructive testing, impact engineering, earthquake engineering etc. To know about the mathematical relations in elastodynamics of solids. To be able to design mechanical components subjected to dynamic loadings.	
10.	Course Content: Fundamentals of wave propagation; Mechanical equilibrium equations and inertial effect; Helmholtz decomposition; Elastodynamics in infinite and semi-infinite medium; Primary and secondary waves; Plane and harmonic waves; Reflection, refraction, scattering of waves; Wave dispersion; Waves in rods and plates; Surface waves: Rayleigh and Love waves; Waveguides; Waves in anisotropic solids, viscoelastic solids, and elastic-plastic solids; Shock wave.	
11.	Textbook(s): 1. Achenbach J D, <i>Wave Propagation in Elastic Solids</i> , 1st Edition, North-Holland Publishing Company (2012). 2. Graff K F, <i>Wave Motion in Elastic Solids</i> , 1st Edition, Dover (1991).	
12.	Reference(s): 1. Brekhovskikh L and Goncharov V, <i>Mechanics of Continua and Wave Dynamics</i> , 1st Edition, Springer-Verlag (1985). 2. Miklowitz J, <i>The Theory of Elastic Waves and Waveguides</i> , 1st Edition, North-Holland Publishing Company (2012).	