

Composite Materials - Web course

COURSE OUTLINE

Composite Materials:

Introduction.

Applications.

Classification.

Manufacturing techniques.

Micro mechanics.

Macro mechanics of single layer.

Macro mechanics of laminate.

Classical lamination theory.

Failure theories.

Interlaminar stresses.

Composite design requirements.

COURSE DETAIL

A Web course shall contain 40 or more 1 hour lecture equivalents.

S.No	Topics	Lecture Details	No.of Hours
1	Module I: 1. Introduction. 2. Applications. 3. Classifications.	Lecture 1-10	6



NP-TEL

NPTEL

<http://nptel.ac.in>

Aerospace Engineering

Pre-requisites:

1. Strength of Materials.

Coordinators:

Prof. R. Velmurugan
 Department of Aerospace Engineering
 IIT Madras

2	Module II: 1. Manufacturing techniques.	Lecture 11-18	6
3	Module III: 1. Micro mechanics of Lamina. 2. Macro mechanics of Lamina. Problems.	Lecture 19-28	9
4	Module IV: 1. Macro mechanics of laminate. 2. Classical lamination theory. 3. Inter laminar stresses. 4. Failure theories Problems.	Lecture 29-40	19

References:

1. Mechanics of Composite Materials - R M Jones
2. Analysis and Performance of Fiber Composites - BD Agarwal, L J Broutman and K Chandrashekhara