



Course Name:

Composite Materials

Course Number: 20-135	Credit: 3
Program: Graduate	Course Type: Technical Selective
Prerequisite: -	Corequisite: -

Course Description (Objectives):

This course introduces the fundamental concepts, mechanical behavior, and analytical and design methods of composite structures. Students will learn macro- and micromechanical principles, failure criteria, and engineering applications of composite laminates, enabling them to effectively use advanced composite materials in the design of lightweight and high-performance structures.

Course Content (outline):

- Chapter 1: Introduction to Composite Materials
- Chapter 2: Macromechanical Analysis of a Lamina
- Chapter 3: Micromechanical Analysis of a Lamina
- Chapter 4: Macromechanical Analysis of Laminates
- Chapter 5: Failure, Analysis and Design of Laminates

References:

- The International Handbook of FRP Composites in Civil Engineering, by M. Zoghi.
- Engineering Mechanics of Composite Materials, by Isaac M. Daniel.
- Introduction to Composite Materials, by Hull and Clyne,
- Introduction to Composite Materials Design, by Ever J. Barbero,
- Mechanics of Composite Materials, by R. Jone,
- Fiber-Reinforced Composites: Materials, Manufacturing and Design, by P.K. Mallick.