



Composites LS-DYNA Training Class

Class Location: **Livermore Software Technology Corporation**
7374 Las Positas Road
Livermore, CA 94551

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Objective of the course

Learn how to run LSDYNA to solve engineering problems that has composites and sandwich materials. Examples are used to illustrate the points made in the lectures.

Who should attend?

This course is recommended for engineers who want to use LSDYNA to run problems involve sandwich and composite materials. This course is useful for engineers and researchers who are working in the area of deformation and strength of composites.

COURSE CONTENTS – Lectures begin daily at 9 am, and run until 5:00 pm.

Course Outline

Introduction

Mechanics of Composite Materials

1. Lamina
2. Symmetric Laminate with in-plane loads
3. Symmetric Laminate with bending and twist loads
4. Symmetric Laminate with both in-plane and flexural loads
5. Un-symmetric Laminate
6. Strength and Failure

Shell Theory

Lamination Theory and Transverse Shear

LSDYNA Composite Materials

Sandwich Composites

1. Through Thickness Integration
2. Sandwich Material Models

Composite Micro-Mechanics Models (user-defined materials as an examples)

1. Woven Composites
2. Strain Rate Effect
3. Fiber Reorientation
4. Flexible loose Woven Fabric

Workshop

There will be several examples, which are designed to understand and reinforce the lectures and the concepts presented. The course will provide users with experience of running and trouble-shooting LSDYNA composite materials analysis.