



Advance LS-DYNA Training Class

Class Location: **Livermore Software Technology Corporation**
7374 Las Positas Road
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Objective of the course

This is a short course on the advance options in LSDYNA. This course provides more information on the options in LSDYNA such as elements, material, contact, hourglass, damping, etc. The course will provide more understanding of what options users should use for their particular situation. Examples are used to illustrate the points made in the lectures.

Who should attend?

This course is recommended for engineers who want to understand LSDYNA in more detail and learn advance topics in impact finite element simulation. This course is useful for engineers and researchers who are working in the area of impact, crashworthiness, metal forming, deformation and strength of isotropic and most common materials, as well as those who are working on biomechanics problems.

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

- INTRODUCTION
- THE NONLINEAR FINITE ELEMENT DYNAMIC EQUATIONS
- TIME INTEGRATION AND TIME STEP, DIFFERENCE BETWEEN EXPLICIT AND IMPLICIT TIME INTEGRATION
- MATERIAL MODELS TECHNOLOGY, SOME COMMON MATERIAL MODELS WILL BE DISCUSSED
- ELEMENT TECHNOLOGY, WHAT ELEMENT FORMULATION SHOULD BE SELECTED
 - SPRING ELEMENTS
 - TRUSS ELEMENTS
 - BEAM ELEMENTS
 - SHELL ELEMENTS
 - SOLID ELEMENTS
- HOURGLASS TECHNOLOGY, WHAT HOURGLASS CONTROL SHOULD BE USED
- CONTACT TECHNOLOGY, WHAT CONTACT SHOULD BE USED
- QUASI-STATIC SIMULATION USING EXPLICIT FE
- DAMPING & DYNAMIC RELAXATION
- GUIDELINES FOR FE MODELING AND SIMULATION

There will be several examples, which are designed to understand and reinforce the lectures and the concepts presented.