



**Locations:**

Livermore Software Technology Corp.  
7374 Las Positas Rd. Livermore, CA 94551  
1740 West Big Beaver Road Troy, MI 48084

Contact: [classes@lstc.com](mailto:classes@lstc.com)  
[www.lstc.com/training](http://www.lstc.com/training)

## Contact Modeling in LS-DYNA

**Instructor: Dr. Nils Karajan**

**2 Day - \$400, Students \$200** w/student ID

Includes on-site continental breakfasts, lunches, breaks, class notes and class dinner

Includes 30-day LS-DYNA® demo license to practice

**Prerequisite:** Attendees should have basic knowledge of LS-DYNA®.

**Objective:** The aim of this class is to provide attendees with a summary of the possibilities and limits of frequently used contact definitions and their options when modeling contact in LS-DYNA®.

**Description:** In general, modeling contact in LS-DYNA® is straightforward for many users and the typical contact definitions that are discussed in the introductory class to LS-DYNA® perfectly suits their needs. But for expert users, LS-DYNA® offers extensive possibilities to enhance contact modelling in their applications. In particular, the manual offers more than 70 different contact types and each type supports numerous options and special settings. While this generous selection guarantees extreme flexibility for the contact definition, it also requires a great deal of knowledge on the user's side to make proper use of it.

The class focuses on a selection of suitable contact types for crash and impact dominated problems. Contact definitions used in manufacturing will be briefly mentioned but the interested user is referred to the specialized classes on these topics. During the class, the effects of the discussed contact types and options on the simulation results are explained with the aid of workshop examples.

**Contents:**

- Classification of contact types in LS-DYNA®
  - Node-to-segment vs. segment-to-segment treatment
  - One-way vs. two-way and single-surface treatment
  - Beam contact
  - Automatic contact
- Penalty vs. Constraint treatment
- Contact thickness
- Definition of a contact keyword and available options
  - Mandatory cards one to three
  - Optional cards A to F
- Tied contacts
- Performance, scalability and MPP options
- Some remarks on robustness
- Troubleshooting
- Current developments in LS-DYNA
- Best practice for various applications
- Summary