REGISTRATION FORM

OCTOBER 1-3, 2002
Indianapolis, Indiana, USA

Name: _____

Company: _____

Mailing Address: _____

_____

Phone: _____

❍ **In conjunction with this course, I am interested in attending the "group day" at the Track Attack Racing School on October 4, 2002. Please send me more information about the cost and schedule for this special one day event.**

Price for Vehicle Dynamics Course: $ 995.00

Payment Method:

- ❍ Please Send An Invoice For Payment
- ❍ Payment by Check Enclosed
- ❍ Please Charge My:

  Visa / MasterCard / American Express

Account #: _____

Exp.: _____

Signature: _____

Mail or Fax your completed Registration Form to:

Engineering Dynamics Corporation
8625 SW Cascade Blvd., Suite 200
Beaverton, OR 97008-7100 USA
Phone: 503.644.4500
Fax: 503.526.0905
Email: training@edccorp.com
Website: www.edccorp.com

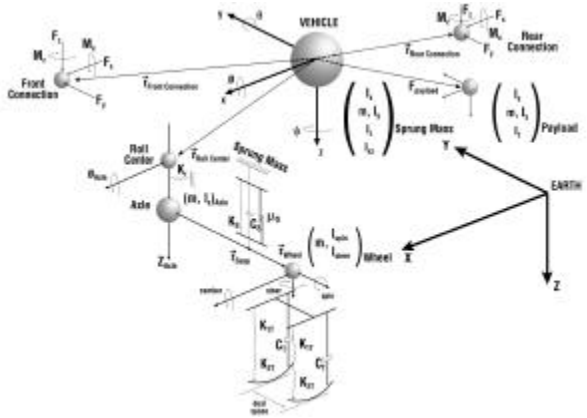
ENGINEERING DYNAMICS CORPORATION

8625 SW Cascade Blvd., Suite 200 * Beaverton, OR 97008-7100 * USA

THEORETICAL AND APPLIED VEHICLE DYNAMICS

October 1 - 3, 2002

Indianapolis, Indiana, USA



ENGINEERING DYNAMICS CORPORATION

DESCRIPTION

The goal of this course is to provide engineers with a greater understanding of vehicle dynamics and control systems through a combination of classroom-based theory sessions and hands-on computer simulation workshops. This course extends beyond an introductory vehicle dynamics course and includes direct applications using the *HVE* three-dimensional simulation environment, as well as providing solid theoretical background for such simulations. The course is focused towards vehicle design engineers and safety researchers with an interest in a greater understanding of vehicle dynamics and automotive chassis systems development.

Attendees will use *HVE* and *HVE*-compatible vehicle dynamics simulation models to conduct simulation studies and virtual experiments directly related to the concepts discussed in classroom lectures.

PRE-REQUISITES

A technical background in engineering, physics or mathematics is required. Coursework in advanced dynamics and vibrations, familiarity with programming in a scientific computing language, familiarity with vehicle simulation technology, or experience using the *HVE* simulation environment and *HVE*-compatible vehicle dynamics simulation models would be beneficial, but is not required.

CONTENTS

Topics covered in this course will include:

- Tire Mechanics – including dynamic tire effects, friction circle and friction ellipse theory, determination of performance parameters, and tire construction and failure modes.
- Vehicle Dynamics – including cornering compliance concept, critical speed and characteristic speed definitions, understeer, oversteer, neutral steer, and Ackerman Steer angle.
- Control Theory Concepts – including time-domain metrics of vehicle performance, and human control performance and response to stimulus.
- Dynamic/Transient Handling Models - including equations of motion of a rigid body in 3-space, and unsteady/transient vehicle behavior with driver-intended and disturbance inputs.
- Suspension and Steering Effects – including antidive and antisquat, camber, toe effects, suspension characteristics and their effect on tire behavior and vehicle handling, and ABS and traction control performance characteristics.
- Dynamic/Transient Ride Models – including tradeoff between ride and handling, chassis flexibility, and characterization of road inputs to chassis.

HOW TO REGISTER

Complete the registration form on the back of this brochure and return it to EDC. You will receive confirmation of your enrollment along with a map of the course location and recommended local hotels and restaurants. Attendees are responsible for making their own travel and hotel arrangements.

ABOUT THE INSTRUCTOR

Dr. Dan Metz, Emeritus Professor with the University of Illinois at Urbana-Champaign, has been the recipient of numerous teaching and engineering achievement awards. Dr. Metz has authored over 50 technical papers and also developed and instructed the SAE-sponsored Automobile Vehicle Dynamics seminar.

Dr. Metz has been a consultant in the areas of automobile and motorcycle vehicle dynamics and aerodynamics for more than 30 years. Clients have included nearly every manufacturer, insurance company, and racing organization in the World, as well as numerous engineering and legal firms.

PLEASE CONTACT EDC CUSTOMER SERVICE IF YOU HAVE ANY QUESTIONS ABOUT THIS 3-DAY TRAINING COURSE.

503.644.4500 / Fax 503.526.0905
Email: training@edccorp.com