



# TRANSMISSION3D™

1 DAY BASIC TRAINING COURSE MARCH 16, 2017

## ANSOL

ADVANCED NUMERICAL SOLUTIONS LLC  
3962 BROWN PARK DRIVE, SUITE C, HILLIARD OH 43026-1159 USA

### Course Highlights

T3D Quick Start

The iSys and Guide user interfaces

Theory and Background

Pre and Post –processing

**Location** Our office at 3962 Brown Park Drive, Hilliard OH

**Date** March 16, 2017

### Purpose

TRANSMISSION3D™ is a finite element based geared system contact analysis package built on our contact solver CALYX™. It uses a suite of innovative modeling techniques to manage the computational load and accuracy requirements of good gear box analysis. A good understanding of these techniques is important for a user to make the best use of the program.

This is a one day short course to introduce you to the software capabilities, background and theory for 3-dimensional, multi-body gear contact analysis of complex gear systems. This course will present you with the steps involved in modeling a gear system, understanding boundary conditions and extracting the results from an analysis.

A simple reduction set and a simple planetary gear set will be used as examples to introduce concepts of Rotors, Connectors, and Contact Pairs. Special attention will be given to flexible-, rigid- and reference frame constraints, rigid body movements, deformations, Fourier interfaces, and how these differ from their counterparts in general purpose finite elements. Special emphasis will be given to concepts that are a common source of confusion for new users.

### Who should attend?

We have a growing community of users, and we have been receiving requests to run a course for new users who have not had the opportunity to be trained in the usage of Transmission3D. If you are a new user, if you need a refresher, or if you are a potential user interested in learning more, this course is for you.

The course is of particular interest to engineers and technicians involved in the analysis, manufacture, and design specification or utilization of simple and complex gear systems. Industries that find this course helpful include the automotive, transportation, wind-energy, construction equipment, aircraft, appliance, general manufacturing, and all gear manufacturers.

### Topics

T3D Quick Start

Reduction Set Model

Simple Planetary Model

User Interface basics

iSys

Guide

Command line/batch mode

Modeling with iSys

Rotor

Connectors

Contact Pairs

Theory & Background

Basic involute theory

Calyx Modeling Assumptions

Bodies & Reference Frame

Finite Element & Local Contact Models

Deformation & Rigid Body Motions

Fourier Interface

Shaft Constraints & Reference Frame Constraints

Pre and Post -processing

Bending Stress

Contact Pattern & Pressure

Fatigue: Alternating Stress and Goodman Diagram

Sub surface stress

### General Information

Price is US\$1,200 per person.

Plan to bring your own laptop computer. We will provide temporary licenses.

Advance registration is required and should be completed no later than February 16th, 2017.

Payment instructions (for major Credit card via PayPal) will be provided upon initial registration.

Applicants are usually accepted on a first come, first served basis to the limit of the course. Course

payment must be completed by no later than February 16th, 2017. Cancellations must be made

before February 2, 2017 in order to receive a refund.

Contact:

For technical questions: Dr. Sandeep Vijayakar [sandeep@ansol.com](mailto:sandeep@ansol.com).

For registration: Delores Orender [delores.orender@ansol.com](mailto:delores.orender@ansol.com).

### Course Instructor

Dr. Sandeep Vijayakar