This is an advanced level training module and designed for the users from corporate and individual engineers who are already using GT-POWER or have basic level of exposure to it and are interested to acquire advanced level skill and understanding of GT-POWER. The module includes theory, construction of engine models, and use of GT-POWER, GEM-3D & GT-POST software. Participants will get good amount of time for practice of software. It will cover the following topics:

- Engine knock modeling
- Use of controller
- Engine model calibration using semi-predictive combustion model
- Neural network approach
- Burn rate calculation from three pressure trace analysis
- Few real industrial projects

At the end of the session, participants will get exposure to wide variety of advanced level topics in GT-POWER. They will get understanding about concept and approach to solve real industrial projects using GT-POWER.

**Duration - 3 days; 1 Session; 8 hrs per day**
*Trainer industrial experience - Over 16 years*

**Agenda:**
- Advanced features of engine modeling, model setup, and solver basics
- Advanced topics in turbocharger modeling
- Measured data quality checklist
- Burn rate calculation from three pressure trace analysis
- Use of controller
- DOE optimization technique
- Engine model calibration using semi-predictive combustion model
- Engine model calibration using predictive combustion model for SI and CI engines
- Engine emissions modeling
- Engine knock modeling
- Neural network approach
- Fast running model (FRM) and Mean value engine model (MVEM) preparation
- Transient simulation
- Thermal analysis of cylinder components
- Speed mode and load mode simulation
- Integrated simulation of engine system with other sub-systems (e.g. cooling system)
- At the end of the session, participants will get exposure to wide variety of advanced level topics in GT-POWER. They will get understanding about concept and approach to solve real industrial projects using GT-POWER.