

Course Name: Modelling and Simulation for Automotive Design
Duration: 4days from 29/11/17 to 02/12/17



4 Days Course Schedule

29/11/2017 FN (9:30-am 12:30 pm)

Powertrain System Overview

Powertrain Software (Sample: EMS)

- S/W Architecture, Sub-systems
- Powertrain H/W (Sample : ECU)
- Sensor interface, actuator interface and communication lines

System Interfaces (CAN Application)

Validation and Calibration mechanism

29/11/2017 AN (1:30-pm 4:30 pm)

HIL System Overview

- Embedded product development lifecycle – V Cycle
- HILS Introduction
- Electrical architecture of HILS- Simulator, Load, wiring, Interface cards
- Electrical Design of HILS – Selection of cards, address setting, ECU interface
- HIL Components and preparation

30/11/2017 FN (9:30-am 12:30 pm)

HILS S/W Design

- Matlab modeling for HILS
- Plant model preparation
- Plant Subsystem integration
- Control desk preparation
- Communication Database preparation and signal integration

30/11/2017 AN (1:30-pm 4:30 pm)

- TATA ELXSI VISIT

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HILS Validation

- HIL Preparation for specific test condition (Diagnostic Test Sample)
- Test Plan preparation (Manual)
- Test Automation – NI Platform/AURTEN (python script)
- Test result verification

01/12/2017 AN (1:30-pm 4:30 pm)

Sample –ECU and Academic Set-up

- Introduction to TE H/W Platform for single cylinder fuel injection
- S/W design in Matlab
- Integration and Programming
- Execution in Lab Environment
- Use of HILS in academia
- Suggestions & Discussion

02/12/2017 FN (9:30-am 12:30 pm)

- ALTAIR

02/12/2017 AN (1:30-pm 4:30 pm)

- NI
- Valedictory function