

- industry cross-fertilisation
- technology transfer
- industry forum
- seminars
- consultancy and case studies
- training

## Control Fundamentals Theory and Practice Agenda (3-day Course)

### Day 1: Linear Systems Models

- 09.00 *REGISTRATION*
- 09.30 Introduction to the Course - "The Need for Control"**
- 10.00 Transfer Functions Representations of Linear Systems**
- 10.45 State-space Representations of Linear Systems**
- 11.15 *TEA/COFFEE*
- 11.30 Frequency Response Analysis (Bode, Nichols and Nyquist)**
- 12.30 *LUNCH*
- 13.15 Hands-On Session: Introduction to Matlab/Simulink and Linear Systems Representation**
- 14.30 Fundamentals of Modelling, System Identification and Simulation**
- 15.30 *TEA/COFFEE*
- 15.45 Hands-On Session: Modelling for Controller Design**
- 17.00 *CLOSE*

### Day 2: Classical Control Design

- 09.00 Stability Analysis for Linear Systems**
- 09.45 Hands-On Session: Stability Analysis**
- 10.45 *TEA/COFFEE*
- 11.00 Control System Structures (The Concepts of Feedback and Feed-forward)**
- 11.45 Fundamentals of Feedback Control Design (Performance, Stability & Disturbance Rejection)**
- 12.45 *LUNCH*
- 13.30 Hands-On Session: Control Fundamentals**
- 15.00 *TEA/COFFEE*
- 15.15 Frequency Domain Control Design (incl. Lead-Lag Compensation)**
- 16.00 Hands-On Session: Frequency Domain Control Design**
- 17.00 *CLOSE*

### Day 3 Practical Aspects in Control

- 09.00 Feedback Control Design using Root Locus with demonstration**
- 10.00 PID Controller Design and Simple Tuning Methods**
- 11.15 *TEA/COFFEE*
- 11.30 Hands-On Session: PID Control Design and Tuning**
- 13.00 *LUNCH*
- 13.45 Implementation Issues and Time Delay Compensation**
- 14.45 Discrete-Time Modelling and Control**
- 15.30 *TEA/COFFEE*
- 15.45 Hands-On Session: Practical Aspects in Control**
- 16:30 *CLOSE*