

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

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

Day 1: Linear Systems Models

08.45 REGISTRATION

09.00 Introduction to the Course - "The Need for Control"

09.45 Linear Dynamic Systems – Transfer Functions and State-Space

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 System Representation

14.15 Hands-On Session: Linear System Representation

15.00 TEA/COFFEE

15.15 Fundamentals of Modelling and Simulation

16.00 Hands-On Session: Modelling for Controller Design

17.00 CLOSE

Day 2: Classical Control Design

**09.00 Fundamentals of Feedback Control Design
(Performance, Stability & Disturbance Rejection)**

10.30 TEA/COFFEE

10.45 Hands-On Session: Control Fundamentals

11.45 Introduction to PID Controller and Tuning Methods

12.30 LUNCH

13.15 Introduction to PID Controller and Tuning Methods (continued)

14.00 Hands-On Session: PID Controller Tuning

15.00 TEA/COFFEE

**15.15 Implementation Issues for Controllers
(Anti-windup, Bumpless Transfer, Rate Feedback)**

16.15 Hands-On Session: Practical Aspects in Control

17.00 CLOSE

Day 3 Practical Aspects in Control

09.00 Frequency Domain Control Design - Lead-Lag Compensation

10.00 Hands-On Session: Frequency Domain Control Design

10.45 TEA/COFFEE

11.00 Control System Strategies – Feedforward/Feedback Control, Cascade, etc.

12.15 LUNCH

13.15 Discrete-Time Systems and Control – Sampling Theory, z-transforms

14.30 TEA/COFFEE

14.45 Hands-On Session: Discrete Time Systems

15.30 What Makes Control Difficult

17:00 CLOSE