- ➔ industry cross-fertilisation → seminars
- technology transfer ➔ industry forum

consultancy and case studies

training



Robust and Reliable Control Systems Design Agenda (3-day Course)

Day 1: Introduction to Robust Control

- 09.00 REGISTRATION
- 09.30 Need for Robust and Reliable Control and Assessing Stability
- **Uncertainty in Systems and Robust Control Design Fundamentals** 10.15
- 11.15 TEA/COFFEE
- 11.30 Inherent Robustness Properties of State Feedback LQ Optimal Control
- 12.15 LUNCH
- 13.00 Hands-on Session: State Feedback LQ Optimal Control and Robustness
- 14.00 Introduction to Kalman Filtering for Control and Condition Monitoring
- 14.45 Hands-on Session: State Estimation for System with Unmeasured States using Kalman Filter
- 15.30 TEA/COFFEE
- 15.45 LQG Control Design Approach for Disturbance Rejection
- 16.30 Hands-On Session: Use of Dynamic Cost Function Weightings to Improve LQG Designs
- 17.00 CLOSE

Day 2: LQG and H-infinity Control Design

- 09.00 Introduction to Loop Transfer Recovery Design Methods
- 09.45 Hands-on Session: LQR/LQG and LTR Designs
- 10.45 TEA / COFFEE
- 11.00 Introduction to H-infinity Robust Control Methods and Advantages
- Hands-On Session: H-infinity Robust Control 12.00
- 13.15 LUNCH
- 14.00 **Robust Control Design Procedures and Design Issues**
- 15.00 H-infinity Reliable Control Systems Design Methods
- 15.45 TEA/COFFEE
- 16.00 Quantitative Feedback Theory: A Powerful Robust Design Method
- 17.00 CLOSE

Day 3: Predictive and Nonlinear Control Design and Fault Monitoring with Application

- 09.00 Introduction to Predictive Control Design Methods
- 10.00 Hands-on Session: Introducing Predictive Control Design and Results
- 11.00 TEA / COFFEE
- 11.15 **Introduction to Fault Detection Methods**
- 12.00 Hands-On Session: Model Based Fault Monitoring Methods
- 13.00 LUNCH
- 13.45 Fault Tolerant, Safe and Reconfigurable Control
- 14.30 Simple Nonlinear Controllers and Compensation Methods
- 15.15 TEA/COFFEE
- 16.00 Hands-on Session: Introducing Nonlinear Control
- 16.30 CLOSE