

EE6225 PROCESS CONTROL

Acad Unit: 3
Pre-requisite: Nil
Effective: Academic Year 2013-2014
Last update: September 2013

LEARNING OBJECTIVE

This course is intended to provide a review of modern process control engineering. The purpose of the course is to serve as an introduction to process dynamics, modeling and control. The objectives include: (a) equipping students with basic understanding of issues related to basic control algorithms, advanced control strategies, multivariable control, plant parameter estimation, and process modelling and simulation; (b) enhancing students' skills and techniques for tackling practical process control system design problems through case studies.

CONTENT

Basic control algorithms. Model Predictive Control. Multivariable control. Plant parameter estimation. Case studies in process control.

LEARNING OUTCOME

On completion of this course, students should be confident to handle tasks on modelling, analysis, design and implementation of control systems for the process industry.

STUDENT ASSESSMENT

Continuous Assessment	20%
Final Examination	80%

TEXTBOOKS

1. J.M. Maciejowski, Predictive Control with Constraints, Prentice-Hall, 2001.
2. Dale E. Seborg, Process Dynamics and Control, John Wiley & Sons Inc., 2004

REFERENCES

1. Camacho and Bordons, Model Predictive Control (2nd Edition), Springer 2004.

2. Liuping Wang, Model Predictive Control System Design and Implementation Using MATLAB, MATLAB, Springer 2009.
3. Rossiter, Model-Based Predictive Control, a Practical Approach, CRC Press, 2003.
4. B. Wayne Bequette, Process Control Modeling Design and Simulation, Prentice Hall, 2003.