

Participatory Technical Short-Courses For Industry

Proposal

Short courses for industry in a hands-on format utilizing the state-of-the-art lab facilities in Mechanical Engineering

Educational Objectives

- Package Cal Poly's learn by-doing methodology for industry
- Closer connection with California industries
- Further research and consulting work industry

Innovation

- Theory concepts corroborated by experimental observations & vice-versa
- Course structure designed to facilitate close interaction



Pilot Course (Summer 2012)

Common-sense Control Engineering

SCHEDULE	Monday	Tuesday	Wednesday	Thursday	Friday
8:30 am	Welcomes, introductions, outline of course structure	Control loop anatomy Positioner vs Regulator	Modeling tanks, hydraulic positioner	Root locus	PID controller: practical aspects
9:00 am					
10:00 am	Introduction to Simulink	Modeling a real system – Motomatic	Tank/positioner labs	Tank/Positioner labs	PID-focussed Lab
11:00 am	Getting feet wet with Simulink				
12:00 PM	Lunch	Lunch	Lunch	Lunch	Lunch
1:00 PM	Simulink exercises	Transfer Functions	Stability, steady-state error	Bode Plots	Wrap-up
2:00 PM		Motomatic - speed control, position control	Tank/Positioner labs		Bode Plot generation
3:00 PM					
4:00 PM					

For detailed course information and online registration, visit www.continuing-ed.calpoly.edu for a direct link to the Common-Sense Control Systems web page.

Course Structure

- 5 x 7-hour days
- Max of 10 participants in groups of 2
- Min of two instructors
- 60%-70% hands-on lab content
- Detailed study material in an interactive format
- Social lunch and dinners

Finances

- \$3000-\$3500/participant

Future Activities and Goals

- Create replica course modules in other areas of Mechanical Engineering
- Pursue opportunities to develop inter-departmental course modules
- Design hands-on course modules that can also be delivered off-campus
- Incorporate this opportunity into the existing international collaborations
- Establish a cohesive stand-alone program with a diploma certification

-Hemanth Porumamilla (HP)

Assistant Professor, Mech. Eng., Cal Poly,
San Luis Obispo, CA 93407

[(805)-756-1359] (hporumam@calpoly.edu)