

## NPTEL Video Lecture Topic List - Created by LinuXpert Systems, Chennai

NPTEL Video Course - Agriculture - NOC:Instrumentation and Process Control in Food Industry

Subject Co-ordinator - Prof. Ashis Kumar Datta

Co-ordinating Institute - IIT - Kharagpur

Sub-Titles - Available / Unavailable | MP3 Audio Lectures - Available / Unavailable

Lecture 1 - Introduction to Process Control

Lecture 2 - Laplace Transform Review - I

Lecture 3 - Laplace Transform Review - II

Lecture 4 - Zero and First Order Instruments

Lecture 5 - First Order Instruments

Lecture 6 - Second Order Instruments - I

Lecture 7 - Second Order Instruments - II

Lecture 8 - Food Instrumentation

Lecture 9 - Chromatography

Lecture 10 - Mass Spectrometry - I

Lecture 11 - Mass Spectrometry - II

Lecture 12 - Model Development

Lecture 13 - PID Controller Response Analysis

Lecture 14 - Block Diagram Representation of CSTR Systems

Lecture 15 - Transient Response of Controlled Systems/Solved Examples

Lecture 16 - Solved Examples on Controlled System

Lecture 17 - Complex Variables as Roots of Characteristic Equation

Lecture 18 - Routh Tests for Stability of Systems

Lecture 19 - Poles and Zeros of the OLTf

Lecture 20 - Plotting of Root Loci

Lecture 21 - Root Loci of PI Controlled Systems

Lecture 22 - Root Loci of PID Controlled Systems

Lecture 23 - First and Second Order Systems Responses

Lecture 24 - A Control Problem

Lecture 25 - PI/PD/PID Controllers and Worked Out Example 1

Lecture 26 - Linear Lag/Transportation Systems/First Order/Second Order Systems- Sinusoidal Input

Lecture 27 - PI/PD/PID Controllers

Lecture 28 - Linear Lag/Transportation system/ First order/ Second order system

Lecture 29 - Worked Out Example 2

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- Lecture 30 - Concepts of Gain Margin and Phase Margins
- Lecture 31 - Worked Out Examples
- Lecture 32 - Z-Transforms of Sampled Functions
- Lecture 33 - Functions Reconstruction and Manipulation
- Lecture 34 - Open Loop Z-Transfer Functions
- Lecture 35 - Neuro - Fuzzy Logic Controller
- Lecture 36 - Auto - Pilot Control Algorithm
- Lecture 37 - Fuzzy logic controller algorithm for Soan Papri Manufacture
- Lecture 38 - Appendices - Set Theory
- Lecture 39 - Fuzzy Sets Theory
- Lecture 40 - Worked Out Examples
- Lecture 41 - Temperature Standards, Calibration and sensor
- Lecture 42 - Vacuum Measurement
- Lecture 43 - Viscometer and Cream Separator
- Lecture 44 - Spray Dryer and Plate Freezer