

Rayat Shikshan Sanstha's

Yashavantrao Chavan Institute of Science, Satara

(Autonomous)

“Workshop on Modern Control Theory: Design and Analysis”

Under

Rashtriya Uchchstar Shiksha Abhiyan (RUSA)

20 July, 2019

A Workshop on “Modern Control Theory: Design and Analysis” was held on 20 July 2019. The Workshop has been organized by the department of Electronics for students and faculty with an opportunity to get a clear the concepts of control system. The Workshop was attended by 26 students and 8 Faculty members of Department of Electronics. The guest lecture began with welcome address by the Prof. Pol S.R. He has introduced and welcome Hon. Prof. S.M. Maske, resource person to deliver the lecture.

This Workshop program formally inaugurated by Hon. Mr. J.A. Wagh, Head Department of Electronics and Computer Science. HOD has shared their views with students and faculty members about Control System and our College. Prof. Pol S.R. proposed the vote of thanks.

In this Workshop there were 4 Sessions. First session was on Introduction of Control System, Basic Concepts of Control System, Open loop and closed loop systems, Classifications, effect of feedbacks on Control System performance. Transfer function modeling and representation of Control system, pole & zero concept, Linear mathematical physical systems, Electrical analogy, Block reduction techniques, Signal flow graph, Mason's gain formula.

Second session was on Type and Order of Control system, Typical tests signal, Time Response of first and second order systems to unit step input, Steady state errors, Time Domain Specifications of Second Order System, Dominant Closed loop Poles of Higher Order Systems. Concept of Stability: absolute, relative and marginal, nature of system response, stability analysis using Hurwitz's criterion, Routh's criterion, Basic properties of Root Loci, construction of Root loci, Angle and magnitude condition for stable systems, concept of inverse root locus and root contour.

Third session was on Steady state response of a system to sinusoidal input, Relation between time and frequency response for second order systems, Frequency response specifications, Stability Analysis with Bode Plots, Polar Plots, conformal mapping, Nyquist stability criterion. Introduction to state space analysis, State space representation for i) Electrical Network ii) nth order differential equation iii) Transfer function. State model from transfer function using: Direct, parallel, cascade, decomposition method.

Fourth Session was on Modeling and transfer function of control system components Potentiometer, DC and AC Servomotors, gear trains, tacho-generators. Design concepts of P, PI, PD, PID controllers, Compensator Networks-lag and lead.

After the all sessions student are enthusiastically participated in Discussion. All the sessions are very useful to students and also faculty members. All are enjoyed a lot this Workshop.

Mr. J.A. Wagh.

Head,

Department of Electronics & Computer Science.

Photo Gallery

