SNS COLLEGE OF TECHNOLOGY

(An Autonomous Institution)

COIMBATORE-35

Accredited by NBA-AICTE and Accredited by NAAC – UGC with A++ Grade
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

COURSE NAME: 19EEB301/ CONTROL SYSTEMS

III YEAR / V SEMESTER
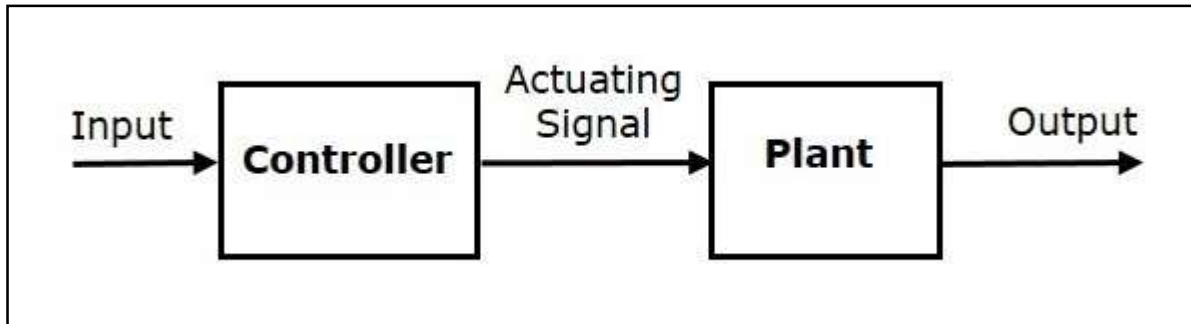
Unit I – SYSTEMS AND THEIR REPRESENTATIONS

Topic : Open and Closed loop System

Open loop Control System

- In open loop control systems, output is not fed-back to the input.

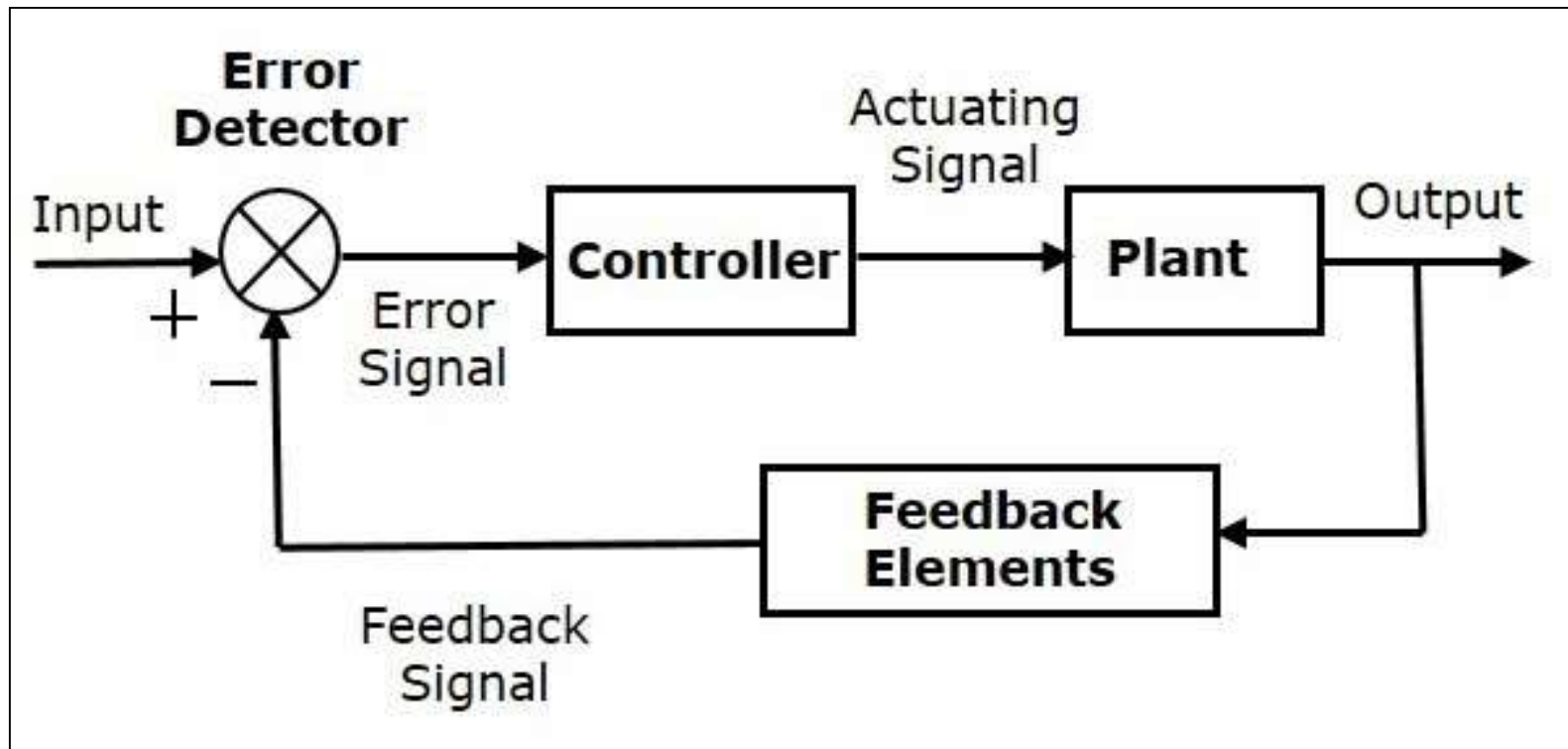- control action is independent of the desired output.

- an input is applied to a controller and it produces an actuating signal or controlling signal.

- This signal is given as an input to a plant or process which is to be controlled.

- The plant produces an output, which is controlled.

Closed loop Control System

- In closed loop control systems, output is fed back to the input. So, the control action is dependent on the desired output.

Closed loop Control System

- The error detector produces an error signal, which is the difference between the input and the feedback signal.

- This feedback signal is obtained from the block (feedback elements) by considering the output of the overall system as an input to this block.

- Instead of the direct input, the error signal is applied as an input to a controller.

- The controller produces an actuating signal which controls the plant.

- The output of the control system is adjusted automatically till we get the desired response.

- also called the automatic control systems.

Open Loop Control Systems	Closed Loop Control Systems
Control action is independent of the desired output.	Control action is dependent of the desired output.
Feedback path is not present.	Feedback path is present.
These are also called as **non-feedback control systems**.	These are also called as **feedback control systems**.
Easy to design.	Difficult to design.
These are economical.	These are costlier.
Inaccurate.	Accurate.

Thank You