
Professional Certificate in Advanced Cybernetics

Fundamentals of Cybernetics

Cybernetics is the study of communication and control in machines and living beings. It is an interdisciplinary field that draws on concepts from mathematics, engineering, biology, and social sciences. In this explanation, we will cover some key terms and vocabulary related to the fundamentals of cybernetics.

1. Homeostasis: Homeostasis is the ability of a system to maintain a stable state despite changes in the environment. It is a fundamental concept in cybernetics and is achieved through feedback loops that allow the system to monitor and adjust its behavior. For example, the human body maintains a stable temperature through a feedback loop that involves the hypothalamus, which senses changes in temperature and triggers responses such as shivering or sweating to restore the body's temperature to its set point.