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Titolo	A Transdisciplinary Introduction to the World of Cybernetics : Basics, Models, Theories and Practical Examples // by E. W. Udo Küppers
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ISBN	9783658421175 3658421177
Edizione	[1st ed. 2024.]
Descrizione fisica	1 online resource (253 pages)
Disciplina	905
Soggetti	Engineering Physical geography Technology and Engineering Earth System Sciences
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Brief historical overview -- Two examples of cybernetic views -- System delimitation -- Part and whole -- Effect structure -- Structure and behavior -- Steering and development -- Perception or the cybernetics of cybernetics -- Basic concepts and language of cybernetics -- Control Circuit and Elements -- Negative Feedback - Negative - Balanced - Feedback -- Positive Feedback - Positive - Reenforced - Feedback -- Self-Regulation - Self-Regulation -- Fluid Equilibrium - Steady-State - and other Equilibria -- Homeostasis - Homeostasis -- Variety - Variety. Cybernetics and its representatives -- Cybernetic models and orders -- Cybernetics and theories -- Cybernetic systems in practice -- Cybernetic systems in nature -- Blood sugar control loop -- Pupil control loop -- Control loop model in forest ecosystem -- Cybernetic systems in technology -- Control of the focus of a camera -- Control of the position of the read/write head in a computer hard disk drive -- Control of the power steering in a motor vehicle -- Control of the room and heating water temperature -- Cybernetic systems in economics -- A cybernetic economic model of procurement-induced disturbances -- The cybernetic control loop as a management tool in the plant life cycle -- The CyberPractice method

according to Dr. Boysen -- Cybernetic systems in society -- Sociocybernetics - Sociocybernetics -- Psychological cybernetics -- Cybernetic governance - Cybernetic government -- Cybernetics and education - Learning biology as an opportunity -- Cybernetics and the military.

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## Sommario/riassunto

How do the perspectives of an interested citizen, an engineer, and a cyberneticist differ on a robot? This introduction to the world of cybernetics provides the basics and discusses the most important thought leaders, models as well as theories. Practical examples from a variety of fields (biology, ecology, engineering, society, and politics) are used to illustrate the basics. Readers are prompted to reflect by questions at the end of the chapters, and the author does not owe the answers. A central theme in all cybernetic considerations and guiding theme of the book are information exchange and communication. The target group Students from technical, scientific, and interdisciplinary courses of study Lecturers with courses on cybernetics/System Dynamics Readers interested in the facets of cybernetics The Author Dr.-Ing. E. W. Udo Küppers studied engineering in Düsseldorf and Berlin. After scientific activities in research institutions and participation in international R&D projects, he has been leading the independent research group Küppers-Systemdenken since 2001. The translation was done with the help of artificial intelligence. A subsequent human revision was done primarily in terms of content.

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