

Документ подписан простой электронной подписью

Информация о владельце:

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Discipline annotation

Discipline name	Математические основы теории систем / Mathematical fundamentals of system theory
Summary	Cybernetics, systems and system analysis. Operations on vectors and matrices. Vector-matrix models of systems. Deterministic system variables. Spectral analysis of deterministic signals. Random variables and random functions. Calculation of statistical characteristics of discrete and continuous random variables. Mathematical modeling of systems. Transformations of mathematical models of systems. Linearization of mathematical models of ordinary dynamical systems. Discretization of mathematical models of ordinary dynamical systems. Typical elements of mathematical models of systems.
Learning outcomes of the discipline	- identifies a problem situation, carries out its multifactorial analysis and diagnostics based on a systematic approach; - determines and evaluates the risks of possible solutions to a problem situation, chooses the best option for solving it.
Workload, c. u.	3 c. u.
Reporting Forms	Credit - 3th semester
List of essential and supplementary literature necessary for mastering the discipline	
Essential literature	1. Volkova V. N., Denisov A. A. Theory of systems and system analysis. - St. Petersburg: Yurayt, 2013. 2. Burganova L. A. Control theory: study guide. – M.: INFRA-M, 2014.
Supplementary literature	1. Kachala V. V. Fundamentals of systems theory and system analysis. Textbook for universities. Moscow: Goryachaya linia - Telecom, 2007. 2. Gataulin A. M., Gavrilov G. V. Mathematical modeling of economic processes in agriculture. Moscow: Agropromizdat, 2015. 3. Korshunov Yu. M. Mathematical foundations of cybernetics: study guide for university students enrolled in special. "Automation and telemechanics". - 3 rd ed., revised and enlarged, Moscow: Energoatomizdat, 2013. 4. System Analysis in Economics and Organization of Production: A Textbook for University Students / Ed. by S. A. Valuev, V. N. Volkova. - L.: Polytechnic, 2014