

Title Foundations of control engineering	Code 1010101261010510361
Field Environmental Engineering First-cycle Studies	Year / Semester 3 / 6
Specialty -	Course core
Hours Lectures: 2 Classes: - Laboratory: 1 Projects / seminars: -	Number of credits 3
	Language polish

Lecturer:

dr hab.inż. Andrzej URBANIAK, prof. PP
Institute of Computing Science
ul. Piotrowo 2
60-965 POZNAŃ
phone: =48 61 665 2999
e-mail:andrzej.urbaniak@put.poznan.pl

Faculty:

Faculty of Civil and Environmental Engineering
ul. Piotrowo 5
60-965 Poznań
tel. (061) 665-2413, fax. (061) 665-2444
e-mail: office_dceef@put.poznan.pl

Status of the course in the study program:

Foundations of control engineering

Assumptions and objectives of the course:

Basic knowledge of control systems
Designing of simple binary control system
Knowledge of Programmable Logic Controllers and modern sensors

Contents of the course (course description):

Binary control system. Boolean algebra. Switching functions. Boolean functions and its minimization. Desing of switching systems. Mathematical models of the systems (differential equations, Laplace transform, transfer function). Feedback control system characteristics. Frequency response methods. The stability of linear feedback systems. Block diagram models. Sensor and converters. Controllers. Computer control systems.

Introductory courses and the required pre-knowledge:

Mathematics: basic algebra, differential equations, Laplace transformation
Electrical engineering (sem. 5)
Information technology(sem. 1 and 2)

Courses form and teaching methods:

Lecture with multimedia presentations

Form and terms of complete the course - requirements and assessment methods:

Exam - writing with several questions (optionally - oral exam)

Basic Bibliography:

Additional Bibliography: