

Automation and System Control

<p>*课程简介 (English) Course Description</p>	<p>This course is to give students a knowledge of fundamental principles of automation & system control and some classical control methods and modern control methods. Course contents include basic concepts of control systems, mathematical abstraction and state model representation of real dynamic systems, characteristics of feedback control systems, stability of linear feedback systems, root locus control methods for dynamic systems, frequency domain control methods for dynamic systems, system stability in the frequency domain, model predictive control methods, etc. The objective of the course is to help the students achieve the following aspects: (1) study how to model dynamic systems via knowledge on real analysis, Fourier & Laplace transform, matrix analysis, stochastic processes etc. (2) get familiar with control system concepts such as observability & controllability; (3) master how to use frequency domain methods, linear state feedback methods to design control systems that satisfy certain requirements; (4) have a knowledge of some advanced control methods such as model predictive control methods.</p>																																			
<p>*教学大纲 (English) Syllabus</p>	<ul style="list-style-type: none"> ● study how to model dynamic systems via knowledge on real analysis, Fourier & Laplace transform, matrix analysis, stochastic processes etc. ● get familiar with control system concepts such as observability & controllability; ● master how to use frequency domain methods, linear state feedback methods to design control systems that satisfy certain requirements; ● have a knowledge of some advanced control methods such as model predictive control methods. 																																			
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 33%;">教学内容 Teaching content</th> <th style="width: 11%;">学时 Teaching hours</th> <th style="width: 11%;">教学方 式 Teaching method</th> <th style="width: 11%;">作业及要求 Assignments</th> <th style="width: 11%;">基本要求 Basic requirement</th> <th style="width: 19%;">考查方式 Evaluation ways</th> </tr> </thead> <tbody> <tr> <td>Concepts and mathematical modeling of control systems</td> <td style="text-align: center;">8</td> <td style="text-align: center;">Lectures/ Practice</td> <td style="text-align: center;">Canvas</td> <td style="text-align: center;">Able to model dynamics systems via mathematics</td> <td style="text-align: center;">Assignments</td> </tr> <tr> <td>Frequency domain methods</td> <td style="text-align: center;">8</td> <td style="text-align: center;">Lectures/ Practice</td> <td style="text-align: center;">Canvas</td> <td style="text-align: center;">Design control systems via these methods</td> <td style="text-align: center;">Assignments</td> </tr> <tr> <td>Linear state feedback methods; observability and controllability</td> <td style="text-align: center;">8</td> <td style="text-align: center;">Lectures/ Practice</td> <td style="text-align: center;">Canvas</td> <td style="text-align: center;">Design control systems via these methods</td> <td style="text-align: center;">Assignments</td> </tr> <tr> <td>Advanced control methods such as model predictive control methods</td> <td style="text-align: center;">8</td> <td style="text-align: center;">Lectures/ Practice</td> <td style="text-align: center;">Canvas</td> <td style="text-align: center;">Understand the spirit of the model predictive control method</td> <td style="text-align: center;">Assignments</td> </tr> </tbody> </table>	教学内容 Teaching content	学时 Teaching hours	教学方 式 Teaching method	作业及要求 Assignments	基本要求 Basic requirement	考查方式 Evaluation ways	Concepts and mathematical modeling of control systems	8	Lectures/ Practice	Canvas	Able to model dynamics systems via mathematics	Assignments	Frequency domain methods	8	Lectures/ Practice	Canvas	Design control systems via these methods	Assignments	Linear state feedback methods; observability and controllability	8	Lectures/ Practice	Canvas	Design control systems via these methods	Assignments	Advanced control methods such as model predictive control methods	8	Lectures/ Practice	Canvas	Understand the spirit of the model predictive control method	Assignments					
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