

Course Number	458.604	Lecture Number	001	Course Title	Process Dynamics and Control	Credit	3
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Instructor	Name : Jong Min Lee	Homepage : http://etl.snu.ac.kr
	E-mail : jongmin@snu.ac.kr	Telephone : 880-1878
	Consultation Time/Place(English) : M & W, 5:00 PM - 6:00 PM	

Purpose of Course(English)	<p>Upon completion of this course, each student will be able to</p> <ul style="list-style-type: none"> • get an overview of the current state of the art and study a prortotypical industrial algorithm • learn system / control theoretic tools for formal analysis and extension of MPC and systematic model-building from input-output data • apply these techniques to a variety of meaningful chemical process control problems
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Materials and Reference(English)	<p>Text:</p> <p>K. J. Astrom and B. Wittenmark, Computer Controlled Systems, 3rd Edition, Prentice Hall, 1997</p> <p>Reference:</p> <p>Some journal papers (to be handed out)</p>
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Evaluation Method	Attendance	Quizzes/Midterm	Projects	Final	Academic Attitudes	Other Data	Total
	5 %	35 %	20 %	40 %	%	%	100%
	Remark (English)	No make-up exam					

References to Course Registration(ENG)	Those who repeat this course will be evaluated separately from the regular group of students.
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Penalty for Cheating(English)	F grade
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Lecture Plan	Week	Lecture Content
	1Week (English)	Introduction to MPC
	2Week (English)	Review of Linear Transformation Theory
	3Week (English)	Description of Industrial MPC
	4Week (English)	Description of Industrial MPC
	5Week (English)	Basics of Sampling and Mathematical Representations of Sampled Signals
	6Week (English)	Basics of Linear Sampled Data Systems
	7Week (English)	Random Variables and Stochastic Processes
	8Week (English)	Stochastic Estimation Theory
	9Week (English)	Linear Quadratic Control Theory
	10Week (English)	Linear Quadratic Control Theory
	11Week (English)	Lectures by an external instructor from industry
	12Week (English)	System Identification
	13Week (English)	System Identification
	14Week (English)	Seminars
	15Week (English)	Seminars, Final Exam