

MODELING AND DESIGN OF ENGINEERING SYSTEMS PhD PROGRAM (November 25, 2016)															
Courses in the Curriculum *						2016-2017		2017-2018		2018-2019		2019-2020		2020-2021	
No	Course Code	Course Name	Type	Department	Status	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	
1	MDES 600	Research Methodology and Communication Skills	Must	Alt.	Active		*		*		*		*		
2	MDES 601	Special Topics	Elective	All	Active	*	*	*	*	*	*	*	*	*	
3	MDES 610	Mathematical Modeling via Differential and Difference Equations	Core	MATH	Active		*		*		*		*		
4	MDES 615	Analytical Probability Theory	Core	MATH	Active	*		*		*		*		*	
5	MDES 618	Probabilistic Methods in Engineering	Core	MATH	Active		*		*		*		*		
6	MDES 620	Numerical Solution of Differential Equations	Core	MATH	Active	*		*		*		*		*	
7	MDES 621	Numerical Linear Algebra	Core	MATH	Active	*		*		*		*		*	
8	MDES 630	Estimation and Identification for Engineering Systems	S&D	MECE	Active		*		*		*		*		
9	MDES 631	Engineering Decision and Risk Analysis	S&D/TE	AÖ	Active	*				*				*	
10	MDES 635	Advanced Systems Engineering	S&D	AÖ, MECE	Active	*		*		*		*		*	
11	MDES 640	Theory of Engineering Design	S&D	MECE	Active		*				*				
12	MDES 641	Biomimetic and Bioinspired Engineering Design	S&D	MECE	Active			*				*			
13	MDES 642	Materials and Process Selection in Design	S&D	MATE	Active	*				*				*	
14	MDES 645	Information Systems Analysis and Design	SE	COMPE	Active	*		*		*		*		*	
15	MDES 650	Advanced System Simulation	M&C	AÖ	Active		*		*		*		*		
16	MDES 651	Boundary Element Method Programming	M&C/TE	MFGE	Active	*				*				*	
17	MDES 652	Design and Modelling of Casting and solidification Processes	M&C	MATE	Active		*				*				
18	MDES 654	Decision Making Analysis	M&C	AÖ	Active			*				*			
19	MDES 655	Linear Optimization	M&C	IE/MECE	Active	*				*				*	
20	MDES 656	Nonlinear Optimization	M&C	???	Active		*		*		*		*		
21	MDES 662	Advanced Natural Computing	M&C/TE	COMPE	Active			*				*			
22	MDES 665	Chemical Thermodynamics of Materials	M&C	MATE	Active		*				*				
23	MDES 667	Fundamentals of Target Tracking	Elective	AP	Active	*				*				*	
24	MDES 672	Advanced Topics in Digital Image Processing	Elective	EE/COMPE	Active				*				*		
25	MDES 674	Supply Chain Management	Elective	IE	Active		*				*				
26	MDES 677	Advanced Artificial Intelligence	Elective	COMPE	Active	*				*				*	
27	MDES 678	Theory of Continuous Media I	Elective	MFGE	Active		*				*				
28	MDES 679	Theory of Continuous Media II	Elective	MFGE	Active			*				*			
29	MDES 683	Theory of Plasticity	Elective	MFGE	Active				*				*		
30	MDES 686	Fundamental Principles of Tissue Engineering	Elective	MATE	Active				*				*		

* This schedule is subject to change depending on availability of the faculty.