



CEEPUS Network CIII-BG-1103-01-1617

“Modelling, Simulation and Computer-aided Design in Engineering and Management”

**International Summer School in  
Modelling, Simulation and Computer-aided Design  
Ljubljana, 18. September – 28. September 2017**

**Organizers:**

University of Ljubljana  
Faculty of Electrical Engineering



Fakulteta za  
informatijske študije  
Faculty of information studies



University of Maribor  
Faculty of Electrical Engineering  
and Computer Science

**Summer School Venue:**

Faculty of Electrical Engineering, Tržaška cesta 25, Ljubljana, Slovenia

**Contact/Registration:**

Prof. Dr. Maja Atanasijević Kunc <maja.atanasijevic@fe.uni-lj.si>

Assoc. Prof. Dr. Blaž Rodič <blaz.rodic@fis.unm.si>

Assoc. Prof. Dr. Rajko Svečko <rajko.svecko@um.si>

**Lecturers:**

Assoc. Prof. Dr. Galia Marinova  
Faculty of Telecommunications  
Technical University of Sofia  
Bulgaria

Assoc. Prof. Dr. Vassil Guliashki  
Institute of Information and Communication Technologies  
Bulgarian Academy of Sciences  
Bulgaria

Prof. Dr. Felix Breitenecker  
Institute for Analysis and Scientific Computing  
Vienna University of Technology  
Austria

Assoc. Prof. Dr. Ildikó Perjési-Hámori  
Pollack Mihály Faculty of Engineering  
Department of Mathematics  
University of Pécs  
Hungary

Prof. Dr. György Maróti  
Faculty of Information Technology  
University of Pannonia  
Hungary

Prof. Dr. Edmond Hajrizi  
UBT - Business and Technology College Prishtina  
Kosovo

Assoc. Prof. Dr. Blaž Rodič  
Faculty of information studies in Novo mesto  
Slovenia

Assoc. Prof. Dr. Rajko Svečko  
Assoc. Prof. Dr. Peter Planinšič  
Assoc. Prof. Dr. Nenad Muškinja  
Faculty of Electrical Engineering and Computer Science  
University of Maribor  
Slovenia

Prof. dr. Gašper Mušič  
Ass. Prof. Dr. Vito Logar  
Ass. Prof. Dr. Gorazd Karer  
Assoc. Prof. Dr. Matevž Pogačnik  
Mag. Marko Papič, As.  
Prof. Dr. Maja Atanasijević-Kunc  
Faculty of Electrical Engineering  
University of Ljubljana  
Slovenia



Day	Time and location	Activity	Title/Description	Lecturers
<b>1</b>	<b>Monday, 18. September 2017</b>			
	Faculty of Electrical Engineering, Tržaška 25, Ljubljana			
	8:15-9:00	Registration		
	9:00-9:45	Opening ceremony	Greeting from the Dean of FE Network presentation Presentation of host partner from FERI Presentation of host partner from FIŠ Presentation of host partner from FE General information about the summer school	Prof.Dr. Gregor Dolinar Assoc.Prof.Dr. Galia Marinova Assoc.Prof.Dr. Rajko Svečko Assoc.Prof.Dr. Blaž Rodič Ass.Prof.Dr. Gorazd Karer Prof.Dr.Maja Atanasijević-Kunc
	9:45-10:00	Coffee break		
	10:00-11:30	Lecture	An Introduction to Modelling and Simulation: from Engineering to Health Care, from Logistics to Socio-economic Systems	Prof. Dr. Felix Breitenecker
	11:30-13:00	Lunch time	Location: FE cafeteria	
	13:00-14:30	Lecture	Modelling and simulation using fuzzy logic	Assoc.Prof.Dr. Nenad Muškinja
	14:30-14:45	Coffee break		
	14:45-16:15	Lecture	Single objective optimization	Assoc.Prof.Dr. Vassil Guliashki
	16:15-16:30	Coffee break		
	16:30-18:00	Lecture	Global and nonlinear multi-objective optimization	Assoc.Prof.Dr. Vassil Guliashki
	<b>2</b>	<b>Tuesday, 19. September 2017</b>		
Faculty of Electrical Engineering, Tržaška 25, Ljubljana				
8:15-9:45		Lecture	Advanced optimization methods in management science	Assoc.Prof.Dr. Vassil Guliashki
9:45-10:00		Coffee break		
10:00-11:30		Lecture	Advanced Computer-aided design tools in telecommunications	Assoc.Prof.Dr. Galia Marinova
11:30-13:00		Lunch time		
13:00-14:30		Lecture	Random Vector Generators for Cybersecurity applications	Assoc.Prof.Dr. Galia Marinova
14:30-14:45		Coffee break		
14:45-16:15		Lecture	Agent based (ABM) modelling of biological and organizational systems	Assoc.Prof.Dr. Blaž Rodič
16:15-16:30		Coffee break		
16:30-18:00	Lecture	State machines – Part 1	Prof. Dr. György Maróti	
<b>3</b>	<b>Wednesday, 20. September 2017</b>			
	Faculty of Electrical Engineering, Tržaška 25, Ljubljana			
	8:15-9:45	Lecture	Complex system design and management – Part 1	Prof. Dr. Edmond Hajrizi
	9:45-10:00	Coffee break		
	10:00-11:30	Lecture	Complex system design and management – Part 2	Prof.Dr. Edmond Hajrizi
	11:30-13:00	Lunch time		
	13:00-15:15	Tutorial	MATLAB (Optimization Toolbox)	Assoc.Prof.Dr. Vassil Guliashki
	15:15-15:30	Coffee break		
15:30-17:45	Tutorial	MATLAB (Global Optimization Toolbox and Symbolic Math Toolbox)	Assoc.Prof.Dr. Vassil Guliashki	
18:00-19:30	Project members'	The second workshop on the Joint program These en Cotutelle	Chair and coordinator: Assoc.Prof.Dr. Blaž Rodič	



		meeting		
<b>4</b>	<b>Thursday, 21. September 2017</b>			
	Faculty of Electrical Engineering, Tržaška 25, Ljubljana			
	8:15-9:45	Lecture	Physical applications of numerical methods using computer algebra – Part 1	Assoc.Prof.Dr. Ildikó Perjési-Hámori
	9:45-10:00	Coffee break		
	10:00-11:30	Lecture	Physical applications of numerical methods using computer algebra – Part 2	Assoc.Prof.Dr. Ildikó Perjési-Hámori
	11:30-13:00	Lunch time		
	13:00-14:30	Lecture	Robust modelling and control	Assoc.Prof.Dr. Rajko Svečko
	14:30-14:45	Coffee break		
	14:45-16:15	Lecture	Computer-aided mathematical courses at University of Pécs: Maple –based experiments in the topics of electromagnetic field	Assoc.Prof.Dr. Ildikó Perjési-Hámori
	16:15-16:30	Coffee break		
	16:30-18:00	Lecture	State machines – Part 2	Prof. Dr. György Maróti
	18:15-19:45	Project members' meeting	CEEPUS coordination meeting regarding the conclusions of the first academic year 2016/2017	Chair-person and project leader Assoc.Prof.Dr. Galia Marinova
<b>5</b>	<b>Friday, 22. September 2017</b>			
	Faculty of Electrical Engineering, Tržaška 25, Ljubljana			
	8:15-9:45	Presentation	Multimedia activities and e-learning at FE (with the visit of TK-labs)	Assoc.Prof.Dr. Matevž Pogačnik Mag. Marko Papić, as.
	9:45-10:00	Coffee break		
	10:00-11:30	Lecture	Development of learning projects from the field of modelling, simulation and control (with the visit of LMSV and LAMS)	Ass.Prof.Dr. Vito Logar
	11:30-13:00	Lunch time		
	13:00-15:15	Tutorial	NIST tests for randomness on different random suits – M, Galois, Kasami, Gold; Modelling and Simulation with PSpice-based tools	Assoc.Prof.Dr. Galia Marinova
	15:15-15:30	Coffee break		
	15:30-17:45	Tutorial	Verification of online CAD tools with PSpice	Assoc.Prof.Dr. Galia Marinova
<b>6</b>	<b>Saturday, 23. September 2017</b>			
	Faculty of Electrical Engineering, Tržaška 25, Ljubljana			
	8:15-9:45	Presentation	Presentation of students and their research work	Chair: Prof.Dr. Edmond Hajrizi
	9:45-10:00	Coffee break		
	10:00-11:30	Presentation	Presentation of students and their research work	Chair: Prof. Dr. György Maróti
	11:30-13:00	Lunch time		



	13:00-15:15	Presentation	Presentation of students and their research work	Chair: Prof. Dr. György Maróti
	15:15-15:30	Coffee break		
	15:30-17:30	Presentation	Presentation of student survey results; conclusions and future plans	Assoc.Prof.Dr. Galia Marinova
-	<b>Sunday 24. September 2017</b>		Free activity day; social life, visits of interesting Slovenian places (info available in given materials; help available)	
7	<b>Monday, 25. September 2017</b>  Portorož	Presentations of papers/ discussion	Transport by bus from FE, Ljubljana to ERK 2017 conference in Portorož	
9	<b>Tuesday, 26. September 2017</b>  Faculty of Electrical Engineering, Tržaška 25, Ljubljana			
	8:15-9:45	Lecture	Modelling and predictive control of systems with complex dynamics	Ass. Prof. Dr. Gorazd Karer
	9:45-10:00	Coffee break		
	10:00-11:30	Lecture	Simulation of fractal and chaotic signals	Ass. Prof. Dr. Peter Planinšič
	11:30-13:00	Lunch time		
	13:00-14:30	Tutorial	State machines – Illustrative examples	Prof. Dr. György Maróti
	13:00-15:15			
	14:30-14:45	Coffee break		
	14:45-16:15	Tutorial	State machines – Students' projects	Prof. Dr. György Maróti
9	<b>Wednesday, 27. September 2017</b>  Faculty of Electrical Engineering, Tržaška 25, Ljubljana			
	10:00-11:30	Lecture	Petri net based modelling and optimization of manufacturing systems	Prof. dr. Gašper Mušič
	11:30-13:00	Lunch time		
	13:00-15:15	Tutorial	Create a question bank using Maple T.A. – Part 1	Assoc. Prof. Dr. Ildikó Perjési-Hámori
	15:15-15:30	Coffee break		
	15:30-17:45	Tutorial	Create a question bank using Maple T.A. – Part 2	Assoc. Prof. Dr. Ildikó Perjési-Hámori
10	<b>Thursday, 28. September 2017</b>  Faculty of Electrical Engineering, Tržaška 25, Ljubljana			
	10:00-11:30	Lecture	Modelling, simulation and control design of multivariable systems	Prof.Dr. Maja Atanasijević-Kunc
	11:30-13:00	Lunch time		
	13:00-13:45	Closing		
			END OF SUMMER SCHOOL	