



University of Rijeka
FACULTY OF ENGINEERING



Doctoral study in the area of Engineering sciences, in the fields of
Mechanical engineering, Naval architecture, Fundamental
engineering sciences and Interdisciplinary engineering sciences

Doctoral Study in the area of Engineering Sciences, in the field of
Electrical Engineering

Doctoral Study in the area of Engineering Sciences, in the Field of
Computer Science

Lecturers

2024/2025.



Common courses

LIST OF MODULES/COURSES							
Year of study: 1.							
Semester: 1.							
MODULE	COURSE	COURSE INSTRUCTOR	L	E	S	ECTS	STATUS
All modules	Methodology of the scientific-research work	Prof. M. Čanađija, D. Sc.	15	0	0	6	C
	Mathematical modeling and numerical methods	Prof. S. Maćešić, D. Sc. Prof. N. Črnjarić-Žic, D. Sc.	15	0	0	6	E
	Optimization methods	Prof. S. Maćešić, D. Sc. Assoc. prof. S. Ivić, D. Sc.	15	0	0	6	E
	Statistical methods and stochastic processes	Prof. N. Črnjarić-Žic, D. Sc. Assist. prof. I. Dražić, D. Sc.	15	0	0	6	E
	Freely selected course	-	15	0	0	6	E



Doctoral study in the area of Engineering sciences, in the fields of Mechanical engineering, Naval architecture, Fundamental engineering sciences and Interdisciplinary engineering sciences

Module 1: Production engineering

LIST OF MODULES/COURSES								
Year of study: 1								
Semester: 1								
MODULE	COURSE	COURSE INSTRUCTOR	L	E	S	ECTS	STATUS	
Production engineering	CAM, CAP, CAD/NC-CIM	Prof. M. Perinić, D. Sc. Asist. Prof. D. Ištoković, D. Sc.	15	0	0	6	E	
	Formability and modern forming technology	Prof. Z. Jurković, D. Sc. Assoc. Prof. T. Pepelnjak, D. Sc.	15	0	0	6	E	
	Intelligent manufacturing systems	Prof. Z. Car, D. Sc. Asist. Prof. N. Anđelić, D. Sc.	15	0	0	6	E	
	Simulation methods in production	Prof. Z. Jurković, D. Sc. Prof. M. Brezočnik, D. Sc.	15	0	0	6	E	
	Intelligent robots and manipulators	Prof. Z. Car, D. Sc.	15	0	0	6	E	
	Selected Chapters on Mechanical Behaviour and Fatigue of Materials	Prof. R. Basan, D. Sc.	15	0	0	6	E	
	Damage and fracture mechanics	Prof. D. Rubeša, D. Sc.	15	0	0	6	E	
	Corrosion and corrosion protection	Assoc. Prof. S. Smokvina Hanza Prof. L. Vrsalović, D. Sc.	15	0	0	6	E	
	Sustainable manufacturing	Prof. G. Cukor, D. Sc. Asist. Prof. G. Šterpin Valić, D. Sc.	15	0	0	6	E	

LIST OF MODULES/COURSES								
Year of study: 1								
Semester: 2								
MODULE	COURSE	COURSE INSTRUCTOR	L	E	S	ECTS	STATUS	
Production engineering	Selected chapters on flexible manufacturing systems		15	0	0	6	E	
	Selected Chapters on Conventional Machining Processes	Academician E. Kuljanić, D. Sc.	15	0	0	6	E	
	Selected Chapters on Non-Conventional Machining Processes	Prof. G. Cukor, D. Sc.	15	0	0	6	E	
	Processes plans optimization	Prof. M. Perinić, D. Sc.	15	0	0	6	E	
	Production Planning and Control	Assist. Prof. S. Doboviček, D. Sc.	15	0	0	6	E	
	Development and operations management	Assist. Prof. S. Žic, D. Sc.	15	0	0	6	E	
	Heat treatment and surface engineering	Assoc. Prof. D. Iljkić, D. Sc. Prof. W. Sitek, D. Sc	15	0	0	6	E	
	Materials testing	Assoc. Prof. S. Smokvina Hanza, D. Sc.	15	0	0	6	E	



		Assist. Prof. M. Fonović, D. Sc.					
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Module 2: Thermal power engineering

LIST OF MODULES/COURSES							
Year of study: 1							
Semester: 1							
MODULE	COURSE	COURSE INSTRUCTOR	L	E	S	ECTS	STATUS
Thermal power engineering	Selected chapters on thermal sciences	Prof. Kristian Lenić, D. Sc.	15	0	0	6	E
	Numerical modelling of heat transfer	Prof. Anica Trp, D. Sc.	15	0	0	6	E
	Experimental methods in heating and energy engineering	Prof. Kristian Lenić, D. Sc.	15	0	0	6	E
	Selected chapters on refrigeration	Assoc. Prof. Boris Delač, D. Sc.	15	0	0	6	E
	Selected chapters on heat exchangers	Prof. Anica Trp, D. Sc.	15	0	0	6	E
	Selected chapters on heating and air conditioning	Prof. Igor Wolf, D. Sc.	15	0	0	6	E
	Implementation of energy efficiency measures	Assist. Prof. Paolo Blecich, D. Sc.	15	0	0	6	E
	Selected chapters on internal combustion engines	Prof. Tomislav Senčić, D. Sc.	15	0	0	6	E
	Modern engine design	Assoc. Prof. Tomislav Senčić, D. Sc.	15	0	0	6	E
	Durability and reliability of thermal energy systems	Assoc. Prof. Vladimir Glažar, D. Sc. Assoc. Prof. Igor Bonefačić, D. Sc.	15	0	0	6	E
Selected chapters on marine energy systems	Prof. Tomislav Mrakovčić, D. Sc.	15	0	0	6	E	

LIST OF MODULES/COURSES							
Year of study: 1							
Semester: 2							
MODULE	COURSE	COURSE INSTRUCTOR	L	E	S	ECTS	STATUS
Thermal power engineering	Selected chapters on marine machinery systems	Prof. Tomislav Mrakovčić, D. Sc.	15	0	0	6	E
	Selected chapters on thermal turbomachines	Assist. Prof. Vedran Mrzljak, D. Sc.	15	0	0	6	E
	Thermodynamic analysis of processes	Assoc. Prof. Igor Bonefačić, D. Sc.	15	0	0	6	E
	Numerical modelling in refrigeration	Assoc. Prof. Boris Delač, D. Sc.	15	0	0	6	E
	Selected chapters on renewable energy sources	Prof. Igor Wolf, D. Sc.	15	0	0	6	E
	Numerical modelling of combustion processes	Assist. Prof. Ozren Bukovac, D. Sc.	15	0	0	6	E
	Optimization of energy systems	Assoc. Prof. Vladimir Glažar, D. Sc.	15	0	0	6	E



Module 3: Computational mechanics

LIST OF MODULES/COURSES							
Year of study: 1							
Semester: 1							
MODULE	COURSE	COURSE INSTRUCTOR	L	E	S	ECTS	STATUS
Computational mechanics	Elastomechanics and plastomechanics	Prof. emeritus J. Brnić, D.Sc.	15	0	0	6	E
	Nonlinear structural analysis	Prof. G. Turkalj, D.Sc. Prof. D. Lanc, D.Sc.	15	0	0	6	E
	Selected chapters on thermomechanics	Prof. M. Čanadija, D.Sc.	15	0	0	6	E
	Vibrations and durability of machines and structures	Prof. R. Žigulić, D.Sc. Prof. S. Braut, D.Sc.	15	0	0	6	E
	Protection from noise and vibrations	Prof. S. Braut, D.Sc.	15	0	0	6	E
	Free surface flow	Prof. S. Družeta, D.Sc.	15	0	0	6	E
	Turbulent flow	Prof. Z. Čarija, D.Sc.	15	0	0	6	E

LIST OF MODULES/COURSES							
Year of study: 1							
Semester: 2							
MODULE	COURSE	COURSE INSTRUCTOR	L	E	S	ECTS	STATUS
Computational mechanics	Mechanics of composite structures	Prof. D. Lanc, D.Sc. Assoc. Prof. N. Fantuzzi, D.Sc.	15	0	0	6	E
	Nanomechanics	Prof. M. Čanadija, D.Sc. Assoc. Prof. M. Brčić, D.Sc.	15	0	0	6	E
	Dynamics of nonlinear mechanical systems	Prof. R. Žigulić, D.Sc. Assoc. Prof. G. Štimac, D.Sc.	15	0	0	6	E
	Structural integrity	Assoc. Prof. M. Brčić, D.Sc. Assist. Prof. S. Krščanski, D.Sc.	15	0	0	6	E
	Computational structural stability analysis	Prof. G. Turkalj, D.Sc. Prof. S. Kravanja, D.Sc.	15	0	0	6	E
	Computational fluid mechanics	Prof. L. Kranjčević, D.Sc.	15	0	0	6	E
	Turbomachinery hydrodynamics	Prof. Z. Čarija, D.Sc.	15	0	0	6	E
	Unsteady pipe flow modelling	Assoc. Prof. J. Škifić, D.Sc.	15	0	0	6	E



Module 4: Design and building of ships

LIST OF MODULES/COURSES							
Year of study: 1.							
Semester: 1.							
MODULE	COURSE	COURSE INSTRUCTOR	L	E	S	ECTS	STATUS
Design and building of ships	Outfitting of marine vessels and offshore structures	Prof. T. Matulja, D. Sc.	15	0	0	6	E
	Ship's design methodology	Assoc. Prof. A. Turk, D. Sc.	15	0	0	6	E
	Seakeeping and maneuverability	Prof. J. Prpić-Oršić, D. Sc. Assoc. Prof. M. Valčić, D. Sc.	15	0	0	6	E
	Selected chapters on ship resistance	Prof. R. Dejhalla, D.Sc. Prof. M. Perić, D.Sc.	15	0	0	6	E

LIST OF MODULES/COURSES							
Year of study: 1.							
Semester: 2.							
MODULE	COURSE	COURSE INSTRUCTOR	L	E	S	ECTS	STATUS
Design and building of ships	Selected chapters on shipbuilding methodology	Prof. M. Hadjina, D. Sc.	15	0	0	6	E
	Selected chapters on ship propulsion	Prof. R. Dejhalla, D.Sc.	15	0	0	6	E
	Selected topics in marine dynamics	Prof. Prpić-Oršić, D. Sc.	15	0	0	6	E
	Selected chapters on ship's design	Assoc. Prof. A. Turk, D. Sc.	15	0	0	6	E
	Selected chapters on marine structural design	Prof. A. Zamarin, D. Sc.	15	0	0	6	E



Module 5: Mechanical engineering design

LIST OF MODULES/COURSES							
Year of study: 1.							
Semester: 1.							
MODULE	COURSE	COURSE INSTRUCTOR	L	E	S	ECTS	STATUS
Mechanical engineering design	Special mechanical transmissions	Prof. N. Lovrin, D. Sc.	15	0	0	6	E
	Principles of High- and Ultra-high Precision Devices	Prof. Saša Zelenika, D. Sc. Prof. Eugenio Brusa, D. Sc.	15	0	0	6	E
	Damage modelling and load carrying capacity analysis of elements and components	Prof. Marina Franulović, D. Sc. Prof. Robert Kunc, D. Sc.	15	0	0	6	E
	Selected Chapters on Design Science	Prof. Robert Basan, D. Sc. Assist. Prof. Tea Marohnić, D. Sc.	15	0	0	6	E
	Design of advanced engineering constructions made of innovative materials	Assist. Prof. Kristina Marković, D. Sc.	15	0	0	6	E
	Advanced control methods in precision engineering	Assist. Prof. Ervin Kamenar, D. Sc.	15	0	0	6	E

LIST OF MODULES/COURSES							
Year of study: 1.							
Semester: 2.							
MODULE	COURSE	COURSE INSTRUCTOR	L	E	S	ECTS	STATUS
Mechanical engineering design	Selected chapters on industrial transport equipment and devices	Prof. N. Lovrin, D. Sc.	15	0	0	6	E
	Compliant Elements and Mechanisms	Prof. Saša Zelenika, D. Sc. Prof. Francesco De Bona, D. Sc.	15	0	0	6	E
	Selected chapters on machine elements design	Prof. Marina Franulović, D. Sc.	15	0	0	6	E
	Multi-speed mechanical convertors	Assist. Prof. S. Troha, D. Sc. Assist. Prof. Željko Vrcan, D. Sc.	15	0	0	6	E
	Selected chapters on gear transmissions	Assist. Prof. Željko Vrcan, D. Sc.	15	0	0	6	E
	Selected chapter on fluid power	Assoc. Prof. Goran Gregov, D. Sc.	15	0	0	6	E



Module 6: Quality assurance and engineering system control

LIST OF MODULES/COURSES							
Year of study: 1							
Semester: 1							
MODULE	COURSE	COURSE INSTRUCTOR	L	E	S	ECTS	STATUS
Quality assur...	Total quality management	Prof. D. Pavletić, D. Sc.	15	0	0	6	E
	Production planning and control	Assist. Prof. S. Doboviček, D. Sc.	15	0	0	6	E

LIST OF MODULES/COURSES							
Year of study: 1							
Semester: 2							
MODULE	COURSE	COURSE INSTRUCTOR	L	E	S	ECTS	STATUS
Quality assurance and engineering system control	Statistical process control	Prof. B. Runje, D. Sc.	15	0	0	6	E
	Design of data base		15	0	0	6	E
	Business decision making	Prof. M. Dimitrić, D. Sc.	15	0	0	6	E
	Reliability of technical systems	Prof. D. Matika, D. Sc.	15	0	0	6	E
	Project management in product and production systems development	Assist. Prof. S. Doboviček, D. Sc.	15	0	0	6	E
	Intelligent systems	Prof. I. Ipšić, D. Sc. Assoc. Prof. S. Dobrišek, D. Sc.	15	0	0	6	E
	Strategic management and competitiveness	Assoc. Prof. L. Jelenc, D. Sc.	15	0	0	6	E
	Quality engineering	Prof. D. Pavletić, D. Sc.	15	0	0	6	E
	Technical systems safety	Prof. D. Matika, D. Sc.	15	0	0	6	E



Module 7: Ecological engineering and environmental protection

LIST OF MODULES/COURSES							
Year of study: 1.							
Semester: 1.							
MODULE	COURSE	COURSE INSTRUCTOR	L	E	S	ECTS	STATUS
Ecological engineering and environmental protection	Selected topics on environment protection	Prof. emeritus J. Dobrinić, D. Sc.	15	0	0	6	E
	Sustainable development management and environmental protection	Assoc. Prof. A. Anić Vučinić, D. Sc.	15	0	0	6	E
	Protection of marine and coastal environments	Assoc. Prof. D. Vukić Lušić, D. Sc. Assist. Prof. Marin Glad, D. Sc.	15	0	0	6	E

LIST OF MODULES/COURSES							
Year of study: 1.							
Semester: 2.							
MODULE	COURSE	COURSE INSTRUCTOR	L	E	S	ECTS	STATUS
Ecological engineering and environmental protection	Materials testing	Assoc. Prof. S. Smokvina Hanza, D. Sc. Assist. Prof. M. Fonović, D. Sc.	15	0	0	6	E
	Waste management	Assoc. Prof. L. Traven, D. Sc.	15	0	0	6	E
	Noise pollution	Assist. Prof. A. Skoblar, D. Sc.	15	0	0	6	E
	Computational modelling of pollution dispersion	Prof. L. Kranjčević, D. Sc.	15	0	0	6	E
	Numerical modelling of environmental flow	Assoc. Prof. J. Škifić, D. Sc.	15	0	0	6	E
	Environmental refrigeration	Assoc. Prof. P. Blecich, D. Sc.	15	0	0	6	E
	Environment protection in energy and process industry	Assist. Prof. V. Dragičević, D. Sc.	15	0	0	6	E
	Microbiological pollution of water	Prof. S. Družeta, D. Sc. Assoc. Prof. D. Vukić Lušić, D. Sc.	15	0	0	6	E



Doctoral Study in the area of Engineering Sciences, in the field of Electrical Engineering

Module 1: Electronic-information systems

LIST OF MODULES/COURSES							
Year of study: 1							
Semester: 1							
MODULE	COURSE	COURSE INSTRUCTOR	L	E	S	ECTS	STATUS
Electronic-information systems	Mixed signal processing	Prof. N. Stojković, D. Sc.	15	0	0	6	E
	Electromagnetic Modeling	Prof. M. Joler, D. Sc.	15	0	0	6	E
	Photonic Devices	Prof. V. Gradišnik, D. Sc.	15	0	0	6	E
	Measurement and Analysis of Electric Power Quality	Prof. S. Vlahinić, D. Sc.	15	0	0	6	E
	Intelligent manufacturing systems	Prof. Z. Car, D. Sc. Asist. prof. N. Anđelić, D. Sc.	15	0	0	6	E
	Intelligent robots and manipulators	Prof. Z. Car, D. Sc.	15	0	0	6	E

LIST OF MODULES/COURSES							
Year of study: 1							
Semester: 2							
MODULE	COURSE	COURSE INSTRUCTOR	L	E	S	ECTS	STATUS
Electronic-information systems	Nonstationary Signal Analysis and Processing	Prof. V. Sučić, D. Sc.	15	0	0	6	E
	Ambient intelligence	Prof. M. Vrankić, D. Sc. Prof. S. Vlahinić, D. Sc.	15	0	0	6	E
	Advanced Digital Signal Processing Methods	Assist. Prof. Ivan Volarić, D. Sc. Prof. Jonatan Lerga, D. Sc.	15	0	0	6	E
	Industrial digital control system	Prof. N. Bulić, D. Sc.	15	0	0	6	E
		Assoc. prof. K. Lenac, D. Sc. Prof. E. Mumolo, D. Sc.	15	0	0	6	E



Module 2: Electric power systems and new technologies

LIST OF MODULES/COURSES								
Year of study: 1								
Semester: 1								
MODULE	COURSE	COURSE INSTRUCTOR	L	E	S	ECTS	STATUS	
Electric power systems and new technologies	Energy efficiency in electrical systems	Prof. D. Franković, D. Sc.	15	0	0	6	E	
	Modelling of Electrical Power Transmission and Distribution Systems	Prof. V. Komen, D. Sc.	15	0	0	6	E	
	Reliability of Technical Systems	Prof. D. Matika, D. Sc.	15	0	0	6	E	
	Control of Synchronous Machines	Prof. N. Bulić, D. Sc.	15	0	0	6	E	
	Power system optimization	Prof. D. Franković, D. Sc. Assist. prof. T. Plavšić, D. Sc.	15	0	0	6	E	

LIST OF MODULES/COURSES								
Year of study: 1								
Semester: 2								
MODULE	COURSE	COURSE INSTRUCTOR	L	E	S	ECTS	STATUS	
Electric power systems and new technologies	Active Distribution Networks	Assist. prof. R. Prenc, D. Sc.	15	0	0	6	E	
	Intelligent Power Systems - Smart Grids	Assoc. prof. V. Kirinčić, D. Sc.	15	0	0	6	E	
	Selected Chapters on Energy Components and Systems of Renewable Energy Sources	Assist. prof. V. Franki, D. Sc.	15	0	0	6	E	
	The elements of energy transition	Prof. A. Višković, D. Sc.	15	0	0	6	E	



Doctoral Study in the Area of Engineering Sciences, in the Field of Computer Science

LIST OF MODULES/COURSES							
Year of study: 1.							
Semester: I.							
MODULE	COURSE	COURSE INSTRUCTOR	L	E	S	ECTS	STATUS ¹
	Information Processing	Prof. J. Lerga, D. Sc. Prof. S. Stanković, D. Sc.	15	0	0	6	E
	Applied Machine Learning	Prof. I. Štajduhar, D. Sc. Prof. R. Filjar, D. Sc.	15	0	0	6	E
	Advanced Interactive Systems Design and Evaluation	Izv. prof. dr. sc. S. Ljubić, D. Sc. Asist. prof. D. Brščić, D. Sc.	15	0	0	6	E
	Selected Chapters from Communication Networks	Prof. M. Tomić, D. Sc.	15	0	0	6	E
	Computer Perception	Prof. K. Lenac, D. Sc. Prof. D. Kragić, D. Sc.	15	0	0	6	E
	Data Mining	Assoc. prof. G. Mauša, D. Sc.	15	0	0	6	E
	Parallel Computing	Prof. L. Kranjčević, D. Sc. Prof. Družeta, D. Sc.	15	0	0	6	E

LIST OF MODULES/COURSES							
Year of study: 1.							
Semester: II.							
MODULE	COURSE	COURSE INSTRUCTOR	L	E	S	ECTS	STATUS
Computer Science	Wearable Computing	Prof. M. Joler, D. Sc.	15	0	0	6	E
	Intelligent Systems	Prof. I. Ipšić, D. Sc. Assoc. prof. S. Dobrišek, D. Sc.	15	0	0	6	E
	Service Robotics	Prof. K. Lenac, D. Sc. Prof. E. Mumolo, D. Sc.	15	0	0	6	E
	Applied Soft Computing	Assoc. prof. G. Mauša, D. Sc. Assoc. prof. D. Huljenić, D. Sc.	15	0	0	6	E
	Biomedical Image Analysis	Prof. I. Štajduhar, D. Sc.	15	0	0	6	E
	Cybersecurity	Prof. J. Lerga, D. Sc.	15	0	0	6	E
	Spatio-temporal statistical learning	Assoc. prof. S. Ljubić, D. Sc. Prof. R. Filjar, D. Sc.	15	0	0	6	E

¹ IMPORTANT: Insert C for compulsory courses or E for elective courses.