

LES

Konetekniikka/Mechanical Engineering

Opintojaksomuutokset/Course changes 2021-2022

UUDET OPINTOJAKSOT/NEW COURSES				
Tunniste/Code	Opintojakson nimi/Name of the course	Op/ECTS	Vuosikurssi/Year	Periodi/Period
BK10A6800	Work Internship in Master's Degree	5	M.Sc. (Tech.) 1-2	1-4 ja kesä
BK10A6900	Digitalised Design, Simulation and Production Tools and Applications	5	M.Sc. (Tech.) 1	1-2
BK10A7000	Individual Project Work	2-30	M.Sc. (Tech.) 1	1-4
BK10A7100	Bachelor's Thesis	10	B.Sc. (Tech.) 3	3-4
BK10A7200	Bachelor's Thesis Seminar	2	B.Sc. (Tech.) 3	1-2
BK10A7300	Machine Elements and Principles*	5	B.Sc. (Tech.) 3	1-2
BK20A2700	Welding Digitalisation, Automation and Adaptivity	5	M.Sc. (Tech.) 1	3-4
BK20A2800	Quality Management and Assurance in Welding Production	5	M.Sc. (Tech.) 2	1-2
BK20A2900	Welding Work and Economy	5	M.Sc. (Tech.) 2	1-2
BK30A0902	Additive Manufacturing and 3D Printing (Basics)	5	M.Sc. (Tech.) 2	1-2
BK30A1500	Additive Manufacturing and 3D Printing (Advanced)	5	M.Sc. (Tech.) 2	1-2
BK50A5300	Sustainable Materials and Machinery for Packaging	5	M.Sc. (Tech.) 1	3-4
BK50A5400	3D-Forming and Converting of Materials	5	M.Sc. (Tech.) 2	1-2
BK50A5500	Sustainable Sheet Metal Product Fabrication	5	M.Sc. (Tech.) 2	1-2
BK50A5600	Design for Manufacturing*	4		3-4
BK70A0800	Computer Aided Engineering	5	M.Sc. (Tech.) 2	1-2
BK90C2700	Material Modelling of Composites and Hybrid Materials	5	M.Sc. (Tech.) 1	4
BK90C2800	Recycling Processes for Materials in Circular Economy	5	M.Sc. (Tech.) 2	1
BK90C2900	Sustainable Manufacturing of Composite Materials and Products	5	M.Sc. (Tech.) 2	2

*Järjestetään ensimmäisen kerran lukuvuonna 23-24/Will be organised first time in academic year 23-24

MUUTTUVAT OPINTOJAKSOT/COURSES CHANGING			
Uusi opintojakso/New course		Korvaa opintojakson/Replaces the course	
Tunniste/Code	Opintojakson nimi/Name of the course	Op/ECTS	Tunniste, nimi ja op-määrä/Code, name, ECTS
BK10A1201	Research Methods and Methodologies*	5	BK10A1200 Research Methods and Methodologies 4 op
BK10A4902	The Language of Product-to-consumer Interaction in Product and Packaging Design	5	BK10A4901 Package Design and Consumer - Package Interaction 5 op
BK10A6101	Technical Documentation and 3D Modeling	6	BK10A6100 Technical Documentation and 3D Modeling 3 op
BK30A0902	Additive Manufacturing and 3D Printing (Basics)	5	BK30A0901 Additive Manufacturing - 3D Printing 5 op
BK50A5001	Product Design and Production Process	5	BK50A5000 Product Design and Production Process 6 op
BK50A5201	Innovation in Design	5	BK50A520 Design Thinking 4 op
BK90C1901	Introduction to Materials Engineering	5	BK90C1900 Introduction to Materials Engineering

*Sähkötekniikan opiskelijoille korvaava opintojakso on BL10A0020 Tutkimuksen suunnittelu ja menetelmät 4 op ja energiatekniikan opiskelijoille BH20A1000 Tutkimuksen suunnittelu ja menetelmät (EnTeDI) 4 op

POISTUVAT OPINTOJAKSOT/COURSES REMOVED			
Tunniste/Code	Opintojakson nimi/Name of the course	Op/ECTS	Korvaava opintojakso (jos päätetty)/Replaced by the course (if any)
BK10A1101	Laboratory Work Course in Mechanical Engineering	2-30	tapauskohtaisesti, ota yhteys opintojen ohjaajaan / muokattu 26.8.
BK10A3401	Green Fibre Materials	5	tapauskohtaisesti, ota yhteys opintojen ohjaajaan/ muokattu 26.8.
BK10A4401	Teräsrakenteiden suunnittelu	5	BK80A2303 Steel Structures II 5 op
BK10A5002	Modern Packaging and Package Manufacturing	5	BK50A5400 3D-Forming and Converting of Materials 5 op / muokattu 2.9.
BK10A5200	Industrial Applications of Robot Systems	7	BK20A2700 Welding Digitalisation, Automation and Adaptivity
BK10A5400	Digitised Design and Production in Welded and 3D-printed Structures	5	BK10A6900 Digitalised Design, Simulation and Production Tools and Applications
BK20A0403	Modern Welding Processes	5	BK20A2700 Welding Digitalisation, Automation and Adaptivity
BK20A2500	Sustainable Welding Production	5	BK20A2800 Quality Management and Assurance in Welding Production
BK30A1400	Individual Project Work of Laser Technology	5	tapauskohtaisesti, ota yhteys opintojen ohjaajaan/ muokattu 26.8.
BK50A3500	Development of Sustainable Materials and Machinery for Packaging Technology	5	BK50A5300 Sustainable Materials and Machinery for Packaging 5 op
BK50A3700	Productivity and Sustainability in Sheet Metal Production	5	BK50A5500 Sustainable Sheet Metal Product Fabrication
BK50A4500	Advanced Metal Materials Processing	5	BK50A3800 Productivity and Sustainability of Metal Cutting 5 op / muokattu 2.9.
BK50A4600	Production Controlling Technologies and Methods	5	Joku Mechanical Engineering -ohjelman syventymismoduulien opintojaksoista / muokattu 26.8.
BK60A1600	Advances in Robotics	3	ei korvaavaa opintojaksoa
BK80A1402	Fatigue Design	5	BK80A1302 Applications for FE-method for Steel Structures
BK90C2000	Hybrid Materials	3	BK90C2600 Nano and Hybrid Materials 5 op
BK90C2100	Functional Properties of Nanomaterials	3	tapauskohtaisesti, ota yhteys opintojen ohjaajaan/ muokattu 26.8.
BK90C2200	Sustainable Manufacturing of Advanced Materials	5	BK90C2900 Sustainable Manufacturing of Composite Materials and Products
BK90C2300	High Performance Products	5	BK90C2700 Material Modelling of Composites and Hybrid Materials
BK90C2400	Project course in Material Engineering	5	tapauskohtaisesti, ota yhteys opintojen ohjaajaan/ muokattu 26.8.
BK90C2500	Manufacturing Processes for Recyclable Products	5	BK90C2900 Sustainable Manufacturing of Composite Materials and Products

EI LUENNOIDA 2021-22/NOT LECTURED IN 2021-22		Luennoidaan seuraavan kerran/Next time lectured in		
Tunniste/Code	Opintojakson nimi/Name of the course			
BK10A7300	Machine Elements and Principles*	23-24		
BK50A5600	Design for Manufacturing	23-24		

PERIODIMUUTOKSET/CHANGES TO TEACHING PERIODS			
Tunniste/Code	Opintojakson nimi/Name of the course	2020-21	2021-22
BK10A4000	Design of Advanced Plate and Shell Structures	1-2	3-4
BK20A2600	Modelling and Simulation in Welding	1-2	3-4
BK30A0803	Digital Advanced Manufacturing with Lasers	1-2	3-4
BK50A2702	Selection Criteria of Materials	3-4	1-2
BK50A3900	Integration of Product's Design, Sustainable Production and Material Selection	1-4	3-4
BK50A4700	Design Communication and Visualization	1-3	3-4
BK50A5001	Product Design and Production Process	1-4	3-4
BK60A1001	Control of Mechatronic Machines	1-2	3-4
BK60A1500	Practical Laboratory Course in Motion Control and Mechatronics	3-4	1-2

BK70A0501	Machine Dynamics	1-2	3-4	
BK70A0600	Computational Methods in Mechanics	3-4	1-2	
BK80A3101	Experimental Research of Welding and Structures	3-4	1-2	
BK90C1901	Introduction to Materials Engineering	1-4 ja kesä	3	

VUOSIKURSSIMUUTOKSET/CHANGES TO YEAR				
Tunniste/Code	Opintojakson nimi/Name of the course	2020-21	2021-22	
BK10A3900	Reliability Based Machine Element Design	2	1	
BK10A4000	Design of Advanced Plate and Shell Structures	2	1	
BK20A2600	Modelling and Simulation in Welding	2	1	
BK30A1301	Laser Based Manufacturing for Design	1	2	
BK60A1500	Practical Laboratory Course in Motion Control and Mechatronics	1	2	
BK90C2600	Nano and Hybrid Materials	2	1	

Jatko-opintojaksomuutokset/Post-graduate course changes 2021-2022

UUDET OPINTOJAKSOT/NEW COURSES				
Tunniste/Code	Opintojakson nimi/Name of the course	Op/ECTS	Vuosikurssi/Year	Periodi/Period
BK50AJ115	Postgraduate Course in Packaging Technolog*	10	Doctoral Studies	1-4
BK80AJ125	Fatigue Design and Fracture	5	Doctoral Studies	1-4 ja kesä

*Hyv. 24.6. LES akateemisessa neuvostossa

MUUTTUVAT OPINTOJAKSOT/COURSES CHANGING				
Uusi opintojakso/New course			Korvaa opintojakson/Replaces the course	
Tunniste/Code	Opintojakson nimi/Name of the course	Op/ECTS	Tunniste, nimi ja op-määrä/Code, name, ECTS	
BK20AJ111	Postgraduate Course in Simulation and Automation of Welding	10	BK20AJ110 Postgraduate Course in Automation, Robotization and Mechanization of Welding 10 op	
BK20AJ116	Postgraduate Course in Weldability and Metallurgy of Materials	10	BK20AJ115 Postgraduate Course in Materials Weldability and Metallurgy 10 op	
BK80AJ106	Advanced Applications for Finite Element Method in Material Modeling and Structures	10	BK80AJ105 Extended Finite Element Method 10 op	
BK80AJ111	Fatigue and Fracture of Metallic Materials	10	BK80AJ110 Computational Methods in Fracture Mechanics 10 op	
BK80AJ121	Design with High Strength Steels	6	BK80AJ120 Design with Ultra-High Strength Steels 6 op	

POISTUVAT OPINTOJAKSOT/COURSES REMOVED				
Tunniste/Code	Opintojakson nimi/Name of the course	Op/ECTS	Korvaava opintojakso (jos päätetty)/Replaced by the course (if any)	
BK20AJ105	Postgraduate Course in Advanced Welding Processes	10		
BK80AJ115	Structural Optimization	6		

PERIODIMUUTOKSET/CHANGES TO TEACHING PERIODS				
Tunniste/Code	Opintojakson nimi/Name of the course	2020-21	2021-22	
BK60AJ105	Industrial Robotics	1-4 ja kesä	3-4	
BK60AJ125	Artificial Intelligent Control	1-4 ja kesä	3-4	
BK60AJ130	Postgraduate Course in Modelling, Simulation and Control of Mechatronic Machines	1-4 ja kesä	3-4	
BK70AJ106	Postgraduate Course in Finite Element Method	1-4 ja kesä	3-4	
BK70AJ112	Postgraduate Course in Real-Time Multibody System Dynamics	1-4 ja kesä	3-4	
BK70AJ115	Postgraduate Course in Rotor Dynamics	1-4 ja kesä	3-4	
BK90AJ102	Postgraduate Course in Fiber Composites	1-4 ja kesä	3-4	