Metropolia UAS	Biotechnology and Chemical	Ī					ier								
Engineering 29.1.							Know-how for circular economy and sustainable developme								
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			skills in mathematics			npc	noi		als			ube		ø.	SC
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				skills	Skills to conduct projects	sustainable production technologies	lar	Clean water production	Efficiency for using materials and energy	-earning competence	<u>ب</u>	community competence	competence	competence	Technological competence
			engineering	λ S	t pro	ina	rcu	onp	ing	ete	Ethical competence	nu	be	m	Ö
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		extent of credits	Strong	Good	lls 1	Clean and	-MC	an	cie	arı	ice	Working	nnovation	Multicultural	ų,
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1st Year of study	Orientation to Field and Studies in Biotechnical,														
	Chemical and Surface Engineering	30													
	Orientation to Field and Studies	5		Х						X	Х	Х			
	Fundamentals of Chemistry 1 Introductory Project and Professional Communication	5 5	X	х	х		Х			X X		х	х		
	Fundamentals of Chemistry 2	5	X	^	^					×		^	^		
	Fundamentals of Mathematics and Natural Sciences 1	5	X							X					
	Fundamentals of Mathematics and Natural Sciences 2	5	х							х					
	Introduction to Industrial Processes in Biotechnical,														
	Chemical and Materials Engineering	30													
	Engineering Chemistry	5	Х						Х						Х
	Math and Science Basics 3	5	X	,						Х		,,	,	Х	
	Project Course in Biotechnology and Chemical Engineering	10	Х	Х	Х		Х					Х	Х		
	Analytical and Organic Chemistry	5	х					х		х					х
	Industrial processes and materials	5	^			х	х	Х	х	Х					Х
	In total	60													
2nd Year of study	Structure and Properities of Materials	15													
	Materials Technology	10	Х			Х	Х		Х	Х					Х
	Project of Studying Material Properties	5	Х	Х	Х	Х	Х	Х	Х	Х	\vdash		Х		Х
	Corrosion Protection of Metal Constuctions Corrosion and methods for Corrosion Protection	15 5	х			х	х	х							х
	Anticorrosive Painting and Hot dip Coating	10		х		X	X	^	х						x
	Materials and Surfaces in Machine Building	15									Н				
	Materials and Coatings Technology of Machinery and		х			х									х
	Equipment Manufacturing	10													
	Materials and Coatings Project of Machinery and	l _													
	Equipment Manufacturing	5	Х	Х	Х	Х	Х		Х	Х					Х
	Coatings of Buildings Coatings of Buildings and Their Life Cycle	15	x			х	х		х	Ų		_			х
	Coating Project on Building Construction and Repair	5	X	х	х	X	^		^	X		X			x
	In total	60											_		
3rd Year of study	Innovations Activities	30													
	Product Design and Manufacturing	5	х			х							х		х
	Industrial Coatings	5	Х			Х	Х		Х						Х
	Current Topics in Materials and Surface Engineering	5	Х	Х	Х		Х		Х	Х	Х		Х	Х	Х
	Multidisciplinary Innovation Project	10 5	Х	X	Х		Х	Х	Х	Х		Х	Х	X	Х
	Engineering Swedish	5		X X										X	
	Telunish as a Second Landilade, Finnish at Mork			Ĥ							Н				
	Finnish as a Second Language: Finnish at Work Installations in Surface Engineering	15								х	х	х		х	х
	Installations in Surface Engineering Industrial Business						Х			^		/			
	Installations in Surface Engineering Industrial Business Project on metallic coatings and industrial painting	15 5 5	х	х	х	х	X X		х	X		^			Х
	Installations in Surface Engineering Industrial Business Project on metallic coatings and industrial painting Environment and Safety	15 5 5 5	x x	х	х	X X		х	x x		х	,			
	Installations in Surface Engineering Industrial Business Project on metallic coatings and industrial painting Environment and Safety Elective Study Module	15 5 5 5 15	Х	х	х		х	х			х				х
	Installations in Surface Engineering Industrial Business Project on metallic coatings and industrial painting Environment and Safety Elective Study Module In total	15 5 5 5 15	Х	х	х		х	х			х				х
4th Year of study	Installations in Surface Engineering Industrial Business Project on metallic coatings and industrial painting Environment and Safety Elective Study Module In total Bachelor's Thesis	15 5 5 5 15 60 15	X			Х	x		Х	х	x				X X
4th Year of study	Installations in Surface Engineering Industrial Business Project on metallic coatings and industrial painting Environment and Safety Elective Study Module In total Bachelor's Thesis Bachelor's Thesis	15 5 5 15 60 15	X	x	x		х	x			х		х		х
4th Year of study	Installations in Surface Engineering Industrial Business Project on metallic coatings and industrial painting Environment and Safety Elective Study Module In total Bachelor's Thesis	15 5 5 15 60 15 15	x	х		Х	x x		Х	х	x			X	x x
4th Year of study	Installations in Surface Engineering Industrial Business Project on metallic coatings and industrial painting Environment and Safety Elective Study Module In total Bachelor's Thesis Bachelor's Thesis Work Placement	15 5 5 15 60 15	x			Х	x		Х	х	х	×	x	x	X X
4th Year of study	Installations in Surface Engineering Industrial Business Project on metallic coatings and industrial painting Environment and Safety Elective Study Module In total Bachelor's Thesis Bachelor's Thesis Work Placement Work Placement 1	15 5 5 15 60 15 15 30 15	x	x		x	x x x	х	Х	х	x	x	х		x x x