

Metropolia UAS Engineering 29.1.2021		Biotechnology and Chemical Engineering														
		extent of credits	Strong engineering skills in mathematics and science	Good interaction skills	Skills to conduct projects	Clean and sustainable production technologies	Know-how for circular economy and sustainable development	Clean water production	Efficiency for using materials and energy	Learning competence	Ethical competence	Working community competence	Innovation competence	Multicultural competence	Technological competence	
1st Year of study	Orientation to Field and Studies in Biotechnical, Chemical and Surface Engineering	30														
	Orientation to Field and Studies	5		x						x	x	x				
	Fundamentals of Chemistry 1	5	x							x						
	Introductory Project and Professional Communication	5	x	x	x					x		x	x			
	Fundamentals of Chemistry 2	5	x							x						
	Fundamentals of Mathematics and Natural Sciences 1	5	x							x						
	Fundamentals of Mathematics and Natural Sciences 2	5	x							x						
	Introduction to Industrial Processes in Biotechnical, Chemical and Materials Engineering	30														
	Engineering Chemistry	5	x						x						x	
	Math and Science Basics 3	5	x							x				x		
	Project Course in Biotechnology and Chemical Engineering	10	x	x	x		x					x	x			
	Analytical and Organic Chemistry	5	x					x		x					x	
	Industrial processes and materials	5				x	x	x	x						x	
	In total	60														
2nd Year of study	Structure and Properties of Materials	15														
	Materials Technology	10	x			x	x		x	x					x	
	Project of Studying Material Properties	5	x	x	x	x	x	x	x	x			x		x	
	Corrosion Protection of Metal Constructions	15														
	Corrosion and methods for Corrosion Protection	5	x			x	x	x							x	
	Anticorrosive Painting and Hot dip Coating	10	x	x		x	x		x						x	
	Materials and Surfaces in Machine Building	15														
	Materials and Coatings Technology of Machinery and Equipment Manufacturing	10	x			x									x	
	Materials and Coatings Project of Machinery and Equipment Manufacturing	5	x	x	x	x	x		x	x					x	
	Coatings of Buildings	15														
	Coatings of Buildings and Their Life Cycle	10	x			x	x		x	x		x			x	
	Coating Project on Building Construction and Repair	5	x	x	x	x			x	x	x				x	
	In total	60														
	3rd Year of study	Innovations Activities	30													
Product Design and Manufacturing		5	x			x							x		x	
Industrial Coatings		5	x			x	x		x						x	
Current Topics in Materials and Surface Engineering		5	x	x	x		x		x	x	x		x	x	x	
Multidisciplinary Innovation Project		10	x	x	x		x	x	x	x		x	x	x	x	
Engineering Swedish		5		x										x		
Finnish as a Second Language: Finnish at Work		5		x										x		
Installations in Surface Engineering		15														
Industrial Business		5					x			x	x	x		x	x	
Project on metallic coatings and industrial painting		5	x	x	x	x	x		x	x					x	
Environment and Safety		5	x			x	x	x	x		x				x	
Elective Study Module		15														
In total		60														
4th Year of study		Bachelor's Thesis	15													
	Bachelor's Thesis	15	x	x	x	x	x	x	x				x		x	
	Work Placement	30														
	Work Placement 1	15		x			x					x	x	x	x	
	Work Placement 2	15		x		x	x	x				x	x	x	x	
	Elective Studies	15														
In total	60															