Metropolia UAS	Biotechnology and Chemical						ner								
Engineering 29.1.2		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 developme	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 Orientation to Field and Studies Fundamentals of Chemistry 1 Introductory Project and Professional Communication Fundamentals of Chemistry 2 Fundamentals of Mathematics and Natural Sciences 1 Fundamentals of Mathematics and Natural Sciences 2	30 5 5 5 5 5 5 5	x x x x x	x x	x		x			x x x x x	x	x x	x		
	Introduction to Industrial Processes in Biotechnical, Chemical and Materials Engineering Engineering Chemistry Math and Science Basics 3 Project Course in Biotechnology and Chemical Engineering Analytical and Organic Chemistry Industrial processes and materials	30 5 5 10 5 5	x x x	x	x	x	x	x x	x	x x x		x	x	x	x x x
2nd Year of study	In total Structure and Properities of Materials Materials Technology	60 <b>15</b> 10	х			х	х		х	Х					Х
	Project of Studying Material Properties  Corrosion Protection of Metal Constuctions  Corrosion and methods for Corrosion Protection  Anticorrosive Painting and Hot dip Coating	5 <b>15</b> 5 10	X X X	x	Х	x x x	X X X	x	x	Х			Х		X
	Materials and Surfaces in Machine Building Materials and Coatings Technology of Machinery and Equipment Manufacturing Materials and Coatings Project of Machinery and Equipment Manufacturing	10 10 5	x	x	x	x	x		x	x					x
	Coatings of Buildings Coatings of Buildings and Their Life Cycle Coating Project on Building Construction and Repair In total	15 10 5	x x	х	х	x x	х		х	x x		x x			x x
3rd Year of study	Innovations Activities Product Design and Manufacturing Industrial Coatings Current Topics in Materials and Surface Engineering Multidisciplinary Innovation Project Engineering Swedish Finnish as a Second Language: Finnish at Work	30 5 5 5 10 5 5	x x x	x x x x	x x	x x	x x x	x	x x x	x x	x	x	x x x	X X X	x x x
	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	x x x	x	x x	x x	x x	x		X	x x x
	Elective Study Module In total	15 60													
4th Year of study	Bachelor's Thesis Bachelor's Thesis	<b>15</b> 15	х	х	х	х	х	х	х	х			х		х
	Work Placement Work Placement 1 Work Placement 2	30 15 15		x x		х	x x	х				X X	x x	X X	X X
	Elective Studies In total	<b>15</b>													