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			skills in mathematics			ppc	economy		materials			competence		ė) Ce
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1st Year of study	Orientation to Biotechnology and Chemical	30		Ŭ	U)	Ŭ		Ŭ							
,	Orientation to Field and Studies	5		х						x	х	х			
	Fundamentals of Chemistry 1	5	Х				Х			X					
	Introductory Project and Professional Communication	5	X	Х	Х					X		Х	Х		
	Fundamentals of Chemistry 2 Fundamentals of Mathematics and Natural Sciences 1	5	X							X					
	Fundamentals of Mathematics and Natural Sciences 1 Fundamentals of Mathematics and Natural Sciences 2	5 5	X X							X X					
_	Introduction to the Industry	30	^							^					
	The World of Microbes	5				х	х	х							х
ı	Math and Science Basics 3	5	Х							Х				х	
	Project Course in Biotechnology and Chemical		Х	Х	х		Х					Х	Х		
	Engineering	10													
	Analytical and Organic Chemistry	5	Х					Χ		X					Х
	Industrial Processes and Materials In total	5 60				Χ	Χ	Χ	Х	Х					Х
	Becoming an Expert in Biotechnology and Chemical	60													
	Engineering	30													
	Engineering Chemistry	5	х						х						х
	Food Chemistry and Nutrition	5	х			х	Х		Х		Х				
	Statistics and Design of experiments	5	Х						Х						
	Fluid mechanics and heat transfer basics	5	Х		Х	Χ	Χ	Х	Χ	Χ			Χ		Х
	Basics of Materials technology	5	Х	.,			Х		Х	.,				.,	Х
	Engineering English and Communication Skills	5		Х						Х				X	
	Becoming an Engineer in Biotechnology and Chemical														
	Engineering	30							v	V					.,
	Process Design Basics Health, Safety and Environmental Responsibility	5 5	X X			X X	х	Х	X X	Х	х				X
	Industrial Business	5	^		х	^	X	^	^	х	X	х		х	×
	Automation Technology	5	х		^		^	х		^	^	^		^	X
	Process Operation Control and Maintenance	5	Х			Х		Х	Х		Х				Х
	Engineering Swedish	5		Х						Х				Х	
	Finnish as a Second Language: Finnish at Work	5		Χ						Χ				Χ	
	In total	60													
•	Phenomena and Unit Operations in Chemical														
	Engineering	30													
	Equilibria and kinetics	5	Х			Х									Х
	Phenomena and material and energy balances in Process Technology	5	v			v	v	v	Х						v
	Unit processes 1	5 5	X X			X	Х	X X	٨						X
	Fluid Mechanics and Heat Transfer advanced course	5	X			х		X	х						X
	Plant Design basics	5			х	х	х	х	X						X
	Reactors and Catalysis	5	х			Х									х
	Innovation and Sustainable Design of Processes	30													
	Multidisciplinary Innovation Project	10		Х	х		Х	Х	Х	Х		Х	Х	Х	Х
	Unit processes 2	5	X			Х		Х							X
	Piping design Plant Design Advanced Course	5	X		v	X	V	v	V						X
	Lab Workshop, Chemical Engineering	5 5	X X	х	Х	X X	Х	X X	Х	x				Х	X
—	In total	60	^	Λ		Λ.		Λ.		^					
	Bachelor's Thesis	15													
Till Teal of Study	Bachelor's Thesis	15		х	х	х	х	х	х	х			х		х
	Work Placement	30													
	Work Placement 1	15		х			х					х	х	х	х
	Work Placement 2	15		Х		Χ	Χ	Χ				Χ	Χ	Χ	Х
\		1													1
\ 	Elective Studies In total	15													_