Metropolia UA Information a Multiform Stu	nd Communication Technology	extent of credits	Mathematics and natural sciences skills	Hardware skills	Network engineering skills	Software skills	ICT business skills	ICT application skills	Communication skills	Learning competence	Ethical competence	Working community competence	Innovation competence	Multicultural competence	Technological competence
1st year of	Discrete Mathematics	5	x			<u> </u>				X					•
study	Statistics	5	Х							Х					
	Special Course in Mathematics	5	Х							Х					
	Physical Effects	5	Х							Х					
	Special Course in Physics	5	Х							Х					
	Introduction to Programming	5			х	Х				Х					
	SQL and Relation Databases	5			х	Х				Х					
	Economics	5					х			Х					
	Engineering Finnish and Communication Skills	5							Х	Х		Х			
	Engineering English and Communication Skills	5							Х	Х					
	Professional Swedish	5							х	Х		Х		Х	
	Finnish as a Second Language: Finnish at Work	5							Х	Х		Х		Х	
2nd - 4th year	Advanced Python Programming	5				Х				Х					
of study	Datastructures and Algorithms	5				Х				Х					
	Basics of Virtualization and Cloud Computing	5			Х	Х	Х	Х		Х					Х
	Amazon Cloud Foundation	5		Х		Х	Х			Х					х
	Vmware vSphere ICM	5		Х		Х				Х					Х
	Windows Server and HyperV	5		Х		Х				Х					Х
	Microsoft Azure	5		Х	Х	Х				Х					Х
	Amazon Web Services	5			Х	Х				Х					Х
	Special Course in Information and Communication Technology	5				Х				Х			Х		
	Optional Professional Studies	70				Х				Х					
	Multidisciplinary Innovation Project	10	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х
	Work Placement 1	15	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х
	Work Placement 2	15	Х	Х	Х	X	X	X	Х	X	X	X	X	X	X
	Bachelor's Thesis	15	Х	Х	Х	Χ	Χ	Х	Х	Χ	Χ	Х	Х	Χ	Х