Network Engineer - Mapping	S	SOUD1412 Clie Develop	nt-Side Web ment	S	OUD1413 Database: Ar Design and Developm	nalysis, SOUD1414 C nent infra	omputer structure	r Systems SOUD e Co	01415 Funda omputer Ne	amentals of etworks	SOUD2368 En	terprise Net	works SOUD141	6 Programming Concepts	SOUD2365 Introduction to Computer Security			SOUD1411 Employabi Develo	ility and Profes	sional SOUD2	363 Server-sid	e Web Development	soud Pr	02364 Object Orie rogramming (OOF	nted) SOUD2366 A	dvanced Project
Technical Competencies / Learning Outcomes	Desigr a websit e to meet define d user requir ement s	Imple n ment webpa t ges Tes that web are eus e enhan app r ced by pria r client- test t side proc	Review a website i terms of design considerat sit user ing requireme ro s and te recommer ing ng future ed improvem es ts	a in f ng ent Ex ndi da re nen ter ol	Analys e and design a databa Apply se moder solutio ately n to solutio ately n to xplai compl meet n ex specifi ataba databa c se se requir ermin querie ement ology s s	Explai n the princip le compo Imple nents, ment a and moder the ately operat Appl compl ions of digita ex a logic databa compu to se ter solve solutio syste probl n m ms	Write progr ms te contr l y comp al ter c hardy are fo e a give e requi emer	re ra Emplo ro y Explai ro comm n the ands funda ou to mental manip princip w ulate les of or operat compu en ing ter irr syste netwo nt ms rking.	Apply Apply IP Addre ssing schem eq es. e	onfigu Design re, and ouble hoot ment a solve issues real with netwo k rking juipm proble ent. m.	Exam ne the techn logies Analys used e the to underl config ying ure infrast and ructur maint e of in enterp enter rise rise netwo netwo	i e e o s config ure a p enterp s rise o netwo r rks	Use tools and techni admini structures admini strate a software netwo rk ns	Imple ment an moder atelyDesigncomplaexUtilise softwatestrerestrateg applicaies in tiontiontion tothe formeettesttestrerespecifispecifiof aedededsoftwarerequirrespecifispecifiof aedededsstiontion	e Exami ne Compar g comm mechani on ms that threat used to g s and control vulner access a abilitie and s of authenti a syste ation to ms. systems	Critically analyse the security risks of a local business in regards to both their computer and networked systems and advise on suitable c remedial actions for prevention of threats.	Apply securit y mecha nisms of e moder ate compl exity.	Demonstrate the ability to reflectively examine own practice for strengths and weaknesses and apply this to the development of a continuing Personal Development Plan (PDP).	1. Demo nstrat e and eviden ce a variety of acquir of acquir ed inform lity ersona lity lity and transf portuni ties. skills	Y Eviden Analys ce self- define aware require ness ents t and design reflecti server on on side own scripte practic applica e n	Impleme nt a moderate e ly ed complex em server- o side r- side r- applicatio n to ed defined tio requirem ents	Critically Integr evaluate ate a the use o back- server- end side data scripting store in a to a solution server- and scripte recomme d nd future applica improve tion ments	of Explain and apply object oriente d concep ts and e design conside rations.	Analyse defined user Create require a ments modera to tely design comple an x object object oriente oriente d d applica applica	Analyse Criticall a real Develo y busines p the evaluat s projec e an proble to the object m and agreed oriente devise specifi d a ation applica project and tion. plan plan	Criticall y evaluat e the Present project finding in line s in an t with approp t the riate agreed format c specific for a ation wider and audien plans e
Knowledge																										
K1: the causes and consequences of network and IT infrastructure failures K2: the architecture of typical IT systems, including hardware, OS, server, virtualisation, voice, cloud, and applications						x x		x		x	x															
K3: the techniques for systems performance and optimisation										x		x														
K4: diagnostic techniques and tools to interrogate and gather information regarding systems performance										x	x		x													
K5: organizational procedures to deal with recording information effectively and in line with protocols										x			x													
engineering activities in line with contractual obligations and customer service															v	×			×							
K8: the nurposes and uses of norts and protocols									Y	x		Y			^	^										
K9: devices, applications, protocols, and services at their appropriate OSI and/or TCP/IP layers.									x	x		x														
K10: the concepts and characteristics of routing and switching						x		X	x			X														
K11: the characteristics of network topologies, types, and technologies.						x		x	x																	
K12: wireless technologies and configurations.						x		x x																		
K13: cloud concepts and their purposes.						x		x																		
K14: functions of network services						x		X																		
K15: the different types of network maintenance											x															
K16: how current legislation relates to or impacts occupation											x								x							
K17: troubleshooting methodologies for network and IT infrastructure										X																
K18: how to integrate a server into a network										X	x		x													
K19: the types of security threats to networks and IT infrastructure assets										X		x	x													
K20: how to use tools to automate network tasks										X			x		x	X										
K21: approaches to change management																	+ +					1 1				
Skills																						<u> </u>				
S1: apply the appropriate tools and techniques when securely operating and testing Networks									x			x	x													

Software Dev - Mapping	SOUD1412 Client-Side Web Development				SOUD1413 Database: Analysis, Design and Development			sis, SOI t	SOUD1414 Computer Systems infrastructure			SOUD1415 Fundamentals of Computer Networks			SOUD2368 Enterprise Networks SOUD1416 Programming Concepts						epts	SOUD2365 Introduction to Computer Security			y SOI	SOUD1411 Employability and Professional Development				SOUD2363 Server-side Web Development SOUD2364 Object Oriented Programming (OOP)						SOUD2366 Advanced Project		
Technical Competencies / Learning Outcomes	Design a websit e to meet define d user require ments	Imple ment webpa ges T that w are e enhanc ap ed by r client- te side pr scripts u	riate receiption of the section of t	Review a website in terms of design onsideration s, meeting user quirements and ecommendi ng future provement s	s Explain i databa se t termin ology	Apply da moder ately so comple x n databa sp se re queries m	nalys e and esign Im a me ataba mo se at olutio cor n to n to neet da pecific equire sol	Expla the princ le nple comp ent a nent oder and tely the mple opera x ons a taba a se comp lutio ter n syste	ain e cip po ts, d ati Apply of digital logic to pu solve r proble em ms	Write progra Er ms to control co compu an ter m hardw u are for op a given require sy ment	mplo Expla y the omm fund ds to ment anip princ late les c erati comp ng ter stem netw s king	ain e da tal of IP pu Addre r sing vor schen g. es.	Configu re, trouble shoot and resolve commo n issues with networ k n equipm ent.	Design and imple ment a solutio n to a real world networ king proble m.	Analys te e the lo underl us ying co infrastr re ucture m of enterp en rise networ ne ks	amin e the echno ogies sed to onfigu e and in ur nterp ento rise ris etwor netw ks ks	Use tools and techni fig ques to e admin erp strate e a vor netwo s k	Apply fundamen tal programm ing structures in the implement ation of simple software or applicatio ns	Design a softwa re applica tion for specifi ed require ments	Imple ment an moder ately comple x softwa tre in applica tion to specifi sof ed require ap ments	Itilise Extest rateg ca es in the th esting of a v oftwa al re oplica sy tion	xamin e Compare mechanis on ms that on may be used to control access bilitie and s of authentic ystem ation to s. systems.	Critically the securit a local bus regards t their comp networked and adv suitable re action prevent threa	analyse y risks of App siness in secu o both y uter and med systems nisu ise on o emedial mod s for at ion of com tts. xit	Demo a bly ref urit exa cha stre ms weak f apply der develo e continu ple Develo y.	onstrate the bility to dectively mine own actice for ngths and nesses and of this to the opment of a uing Persona opment Plar (PDP).	Analyse own PDP to inform employabi lity prospects al opportunit ies.	1. Demon strate and eviden ce a variety Evide of ce sel acquir awar ed ness interpe and rsonal reflec and on or transfe own rable pract skills e	n Analyse f- defined e requirem 5 nts to design a ti server- n side scripted ic application n	Implemen t a moderate y complex e server- side scripted applicatio n to defined p requirements	Integra te a back- end data store to a server- scripte d applica i tion	Critically evaluate the use of server- side scripting in a solution and recomme nd future improvem ents	Analys define and requir and requir apply ments object to oriente desigr d an oncept object s and orient design d onside applica ations. ion	e Create d create a Criti modera y tely eva comple e t x object obj e oriente orie d (applicat app ion. ic	icall Analy 7 a rea 1 at busin an s ect probl nte man 1 devise icat proje n. plan	 Critica Critica Y evalu e that p the in lin project with to the the agreed ag	all at e Present ct findings e in an n approp riate ed format fic for a n wider audienc s e	
										_					· · · · · ·	Kno	wledge					•						•				.						
K1: all stages of the software development life cycle (what each stage contains, including the inputs and outputs) K2: roles and responsibilities within the software development lifecycle (who is responsible for what)								x										x x															x x					
K3: the roles and responsibilities of the project life cycle within your organisation, and your		+				+													+ +												+ +			+				
role								X																									x		X	X		
K4: how best to communicate using the different communication methods and how to adapt appropriately to different audiences	t																			x								x									x	
K5: the similarities and differences between different software development methodologies,	,							x										x															x					
such as agrie and waterfall. K6: how teams work effectively to produce software and how to contribute appropriately.		x						x																										x				
K7: software design approaches and patterns, to identify reusable solutions to commonly occurring problems								<u>~</u>					x	x					x		x																	
K8: organisational policies and procedures relating to the tasks being undertaken, and when																						v				x		x			1 1					v		
to follow them. For example, the storage and treatment of GDPR sensitive data.																			<u> </u>			^				^					<u> </u>							
K9: principles of algorithms, logic and data structures relevant to software development					X													X															X					
Skills		, , , , , , , , , , , , , , , , , , ,																					T															
S1: create logical and maintainable codes		X				X		x	Х											x										X				X				