

	Autumn 1a	Autumn 1b	Spring 2a	Spring 2b	Summer 3a	Summer 3b
CONTENT	Memory and Storage:	Computer Networks,	Network Security:	Systems Software:	Ethical, Legal, Cultural	Practical Programming –
	- Primary storage	Connections and	- Threats to computer	-Operating systems	and Environmental	within this term students
Declarative	 The need for 	Protocols:	systems and networks	- The purpose &	impacts of digital	will learn how to use the
/ core /	primary storage	- Networks and	- Forms of Attack:	functionality of	technology:	Exam reference language
powerful	 The difference 	topologies	 Malware 	operating systems:	 Impacts of digital 	needed for their
Knowledge	between RAM &	- Types of Networks:	 Social engineering 	 User interface 	technology on wider	component 2 exam.
– 'Know	ROM	LAN & WAN	e.g. phishing,	 Memory 	society including:	
What'	 The purpose of 	- Factors that affect the	people as the 'weak	management &	 Ethical issues 	Students will be given a
	ROM & RAM in a	performance of	point'	multitasking	 Legal issues 	series of Python
	computer system	networks	 Brute-force attacks 	 Peripheral 	 Cultural issues 	programming tasks that
	 Virtual memory 	- The different roles of	 Denial of service 	management &	 Environmental 	will allow them to:
	 Secondary storage 	computers in a client-	attacks	drivers	issues	- Design
	 The need for 	server and peer-to-	 Data interception 	 User management 	 Privacy issues 	- Write
	secondary storage	peer network	and theft	 File management 	 Legislation relevant 	- Test
	 Common types of 	- The hardware needed	 The concept of SQL 	 Utility software: 	to Computer	- Refine
	storage	to connect stand-	injection	- The purpose &	Science:	
	 Suitable types of 	alone computers into	- Identifying &	functionality of utility	 The Data 	Practical programming
	storage devices &	a LAN	preventing	software	Protection Act	will include how to write
	storage media for	- Internet as a	vulnerabilities	- Utility system	2018	the following in terms of
	given applications	worldwide collection	- Common prevention	software:	 Computer Misuse 	programming:
	 The advantages & 	of computer networks	methods:	 Encryption 	Act 1990	- Pseudocode
	disadvantages of	- Star and mesh	 Penetration testing 	software	 Copyright 	- Flowcharts
	different storage	topologies	 Anti-malware 	 Defragmentation 	Designs and	- OCR Exam Reference
	devices (Capacity,	- Wired and wireless	software	Data compression	Patents Act 1988	Language
	Speed, Portability,	networks, protocols &	 Firewalls 		 Software Licences 	- Natural English
	Durability,	layers	 User access levels 		(open	
	Reliability & Cost)	 Moods of wired and 	 Passwords 		source/proprietary)	
	- Units	wireless connections	 Encryption 			
		- Encryption	 Physical security 			



	T I 11 C 1 1					
	 The units of data 	- IP & MAC addressing				
	storage	- Standards				
	 How data needs to 	- Common protocols				
	be converted into	including:				
	binary format	o TCP/IP				
	 Data capacity and 	o HTTP				
	calculation of data	 HTTPS 				
	capacity	o FTP				
	requirements	o POP				
	 Data storage (refer to 	ο ΙΜΑΡ				
	SOW for further	o SMTP				
	breakdown)	 The concept of layers 				
	 Numbers 					
	 Characters 					
	 Images 					
	 Sound 					
	- Compression					
	 Types of 					
	compression					
	(Lossy & Lossless)					
Skills	 Why computers have 	- The characteristics of	 Threats posed to 	- What each function of	 Technology introduces 	- Design programs
	primary storage (how	LANs & WANs	devices/systems	an operating system	ethical, legal, cultural,	- Write programs
Procedural	this consists of RAM &	- Understanding of	 Knowledge/principles 	does	environmental and	- Test programs
Knowledge	ROM)	different factors that	of each form of attack	- Features of a user	privacy issues	- Refine programs
– 'Know	- Key characteristics of	can affect the	including:	interface	 Knowledge of a variety 	- Pseudocode
How'	RAM & ROM	performance of a	 How the attack is 	- Memory management,	of examples of digital	- Flowcharts
	 Why virtual memory 	network	used	e.g. the transfer of	technology and how it	
	may be needed & how	- The tasks performed by	 The purpose of the 	data between	impacts on society	
	it works	each piece of hardware	attack	memory, and how this	- An ability to discuss the	
	 Why computers have 	- The concept of the	 Understanding of how 	allows for	impact of technology	
	secondary storage	Internet as a network of	to limit the threats	multitasking.	based around the	
		computer networks	posed		issues listed	



Recognise a range of secondary storage devices & the multiple Domain Name differences between them- A Domain Name Service multiple Domain Name wulterabilities vulnerabilities - Knowledge/principles o What each processor and that this processor and that this processor and that this allows or prohibits - The need to license software and the purpose of sach the specific actions it allows or prohibits - The need to license software and the purpose of sach method: - Nowledge/principles o What each processor and that this processor and that this allows or prohibits - The need to license software and the software and the the software and the softwar						
devices & the differences between themmultiple Domain Name Serversvulnerabilities conversion of a URL to disadvantages of ad IP addressdevices in the conversion of a URL to advantages a and IP addressvulnerabilities conversion of a URL to method:devices & the process needs to be managedthe specific actions it allows or prohibits• Advantages & devices- Concept of servers providing services- Concept of servers providing services- Oncept of lents requesting/using services from a server- Oncept of lents imit/prevent- Allocation of a requesting/using services from a server- Allorating folders o- Features of open socrue- Data storage devices have different fixed capacities- Advantages & disadvantages of the cloadd- Advantages & disadvantages of star & disadvantages of star & disadvantages of sured to socrue- Allocating folders o- Features of proprietary socrue + o- Data storage devices files- Advantages & disadvantages of star & drawbacks of wired versus wireless commet backs of wired versus wireless- Advantages & disadvantages of star & drawbacks of wired versus wireless- Omary encentifs & drawbacks of wired versus wireless- Omary encents & to secure diata cross network- Denary number range 0-255, Hexadecimal range 000000- 1111111- IP addressing and the format of an IP address- IP addressing and the format of an IP address- IP addressing and the format of a IP address- Understand the terms mistor- IP addressing and the format of an IP address- IP addressing and t	- Recognise a range of	- A Domain Name Service	- Understanding of	- Understand that: data	- The purpose of each	
differences between themServers - A DNS's role in the conversion of a URL to disdvantages of and IP address- Knowledge/principles of each prevention method: • What each preventionprocess needs to be method: • User managed • User management functions e.g Ithe need to license software and the purpose of a software licence• Why data must be stored in binary format requesting/using • Earliniarity with data moving • Data storage devices have different fixed capacities- Concept of clients requesting/using • The Cloud: remote disadvantages of the cloud capacities- Knowledge/principles of each prevention method: • Why data must be • Allocation of an • Allocating folders • Advantages & disadvantages of the capacities • Cloud: remote stored infierent fixed capacities • Cloud: remote service provision • Advantages & disadvantages of star & disadvantages of Star & disadvantages of Star & disadvantages of Star & disadvantages of sound, ingites • Concept of servers • Concept of servers • Advantages & disadvantages of Star & disadvantages of star & disadvantages of star & disadvantages of sound, images and text files • Denary number range • Oonections- Knowledge/principles • Advantages • Advantages & disadvantages of size or · Advantages & disadvantages of size or versus wireless • Compare benefits & diversites • Compare benefits & • Paddressin		(DNS) is made up of				
them- A DNS's role in the conversion of a URL to disadvantages of and IP addressof each prevention method:process needs to be managed- The need to license software and the purpose of a software licencedevices- Concept of servers previding services· What each prevention- User management functions e.g User management accountpurpose of a software software and the purpose of a software source- Why data must be stored in binary format units and moving- Concept of clients requesting/using services from a server - The Cloud: remote service provision- How it limits the attack o Security etc Features of open source- Data storage devices capacities- Advantages & disadvantages of the cloud- How it limits the attack o Naming o Allocating folders- Features of proprietary- Calculate required sound, images and text files- Advantages & disadvantages of Star & drawbacks of wired versus wireless connections- Moving files o- Onephilon files o- Denary number range 0-2555, Hexadecimal range 000FF & Binary most significant bit and format of an IP addressi- The principle of encryption to secure data across network connections- Water secure o- How it limits the attack o- Data storage opacity for given size range 0000000 - 1111111- IP addressing and the format of an IP address- Onepart encryption to secure data across network connections- Moving files o- How it limits the attack o- Denary number range most significant bit and format of an IP address <td>devices & the</td> <td>multiple Domain Name</td> <td>vulnerabilities</td> <td>devices & the</td> <td>the specific actions it</td> <td></td>	devices & the	multiple Domain Name	vulnerabilities	devices & the	the specific actions it	
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disadvantages of different storage devicesand IP addressO What each prevention method may- User management functions e.g.purpose of a software licenceWhy data must be stored in binary format - Familiarity with data untis and moving between them- Concept of clients requesting/using services from a server- How it limits the attack- Access rights o Access rights o Security etc Features of proprietary source- Data storage devices have different fixed capacities- The Cloud: remote disadvantages of the cloud- Went attack- Naming o Allocating folders o Saving etc Features of proprietary- Calculate required storage capacity for a given size- Advantages & disadvantages of star & drawback of wired drawbacks of wired drawbacks of wired drawbacks of wired range 00-PF & Binary range 0000000 - till11111- Connections data across network connections- User management functions e.g. - Allocating folders o Security etc Data storage devices have different fixed disadvantages of the capacities- Advantages & disadvantages of the cloud- Naming o Allocating folders o Saving etc Features of proprietary- Calculate required files- Advantages & disadvantages of star & drawbacks of wired drawbacks of wired drawbacks of wired range 00-PF & Binary range 0000000 - data across network connections- User management o Allocating folders o Saving etc Hadressing and the format of an IP addressi- Data storage files sound, images and the most significant bit and format of an IP addressi- O Allocat	them	- A DNS's role in the	of each prevention	process needs to be	- The need to license	
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most significant bit and format of an IP address	11111111	connections				
	- Understand the terms	- IP addressing and the				
least significant bit (IPv4 & 6)	most significant bit and	format of an IP address				
	least significant bit	(IPv4 & 6)				



benefi	cols, and the its of using layers the difference What are the the the the the the the the the th	he different Wh	Vhat is the purpose of	What are the different	How do we use the exam
primary & secondary storage?What ar difference affect th from RAM & ROM?What is the difference of a net 	re some of the happen to a system/net factors that can he performance work? middle atta ardware can be connect most commatters to a LAN? attack?	ttack that can an a Ho twork? sys an in the and ack done? Ho re prevent the sys non forms of per Wh List util	n operating system? low does the operating ystem manage memory nd multitasking? low does the operating ystem manage eripheral devices? Vhat is utility software? ist the different types of tility software and what hey do.	impacts of digital technology? What is the difference between open source and proprietary software? What are the different legislations that are relevant to computer science? What are the main points of the computer misuse act?	reference language to answer exam questions? What is the difference between pseudocode and flowcharts? How do we design a program? How do we write a program? How do we test a program? How do we refine a program?



		List the common protocols and what they do What do the different layers do?				
Assessment	End of Memory and storage assessment (will also include prior modules)	End of Computer Networks, connections and protocols assessment (will also include prior modules)	End of Network Security assessment (will also include prior modules)	End of Systems software assessment (will also include prior modules)	End of Ethical, legal, cultural and environmental impacts of digital technology assessment (will also include prior modules)	End of Component 1 – Computer Systems assessment Practical programming assessment