CAMBRIDGE
ADVANCED
NATIONALS

OCR
Oxford Cambridge and RSA

Mapping Guide

DRAFT

LEVEL 3 CAMBRIDGE ADVANCED NATIONAL (AAQ) IN

COMPUTING: APPLICATION DEVELOPMENT

Certificate H029

Extended Certificate H129

For first teaching in 2025

Mapping the Cambridge Advanced National in Computing: Application Development to Cambridge Technicals Information Technology Level 3: 05838–05842, 05877

ocr.org.uk/cambridge-advanced-nationals

Introduction

Cambridge Advanced Nationals are our new Level 3 qualifications, available for first teaching in 2025. We've worked closely with teachers and representatives from higher education institutions throughout the development process to ensure that these qualifications are of the highest quality, preparing your students for their next steps.

These qualifications offer current, engaging content that is relevant for young people pursuing degree courses and careers across various fields. Students will learn and develop vital practical skills, which they can directly apply to real-life situations and professional scenarios. At the same time, they will also develop a solid foundation of theoretical knowledge and understanding necessary for their progression to university. We've designed these new qualifications to be accessible for all students.

We've created this mapping guide to help you move from the current Level 3 Cambridge Technicals qualifications to the new Cambridge Advanced Nationals qualifications. The guide clearly shows which content is the same as you are used to, and where new content has been introduced.

This mapping guide

In the tables that follow, you can see:

- new unit details including Topic Area (TA) numbers and titles

- how the new units map to the existing specification units that you be familiar with

- which content is completely new to these qualifications

- which content from the existing specifications no longer features in the new qualification

- brief comments about the changes we've made.

CAMBRIDGE ADVANCED NATIONALS

In each unit, you'll see we now have teaching content in Topic Areas instead of learning outcomes. Read more in the specification.

Mapping detail

Cambridge Advanced National (AAQ) Computing: Application Development		Cambridge Technicals Information Technology Level 3: 05838–05842, 05877		
F160 Fundamentals of Application Development				
Topic Area number	**Topic Area title**	**Unit number**	**LO number**	**Comment**
1.1	Programs and Applications	1	2	LO2.1 - LO2.2 Types of software and application software give the core understanding required for F160 1.1.
1.2	Operating Systems for application software	1	2.4	Open source operating systems are common to both old and new specifications.
1.3.1	Application types and categories	1	2.2	The productivity software application type is common to both specifications.
1.3.2	Application software categories	1	2.1	All application software categories identified in the new specification are present in the old specification content.
1.3.3	Application software types	1	2.1	Off the shelf and bespoke application types are common to both specifications. Custom off the shelf is not present in the old specification.

Cambridge Advanced National (AAQ) Computing: Application Development	Cambridge Technicals Information Technology Level 3: 05838–05842, 05877	

F160 Fundamentals of Application Development				
Topic Area number	Topic Area title	Unit number	LO number	Comment
2.1	Software development models	6	1.2	Waterfall, prototype, iterative, RAD, spiral and agile are common to both specifications.
		8	1.1	Some similar content – labelled project methodologies in old unit. Waterfall and agile are common to both specifications.
		9	1.1	Similar content – labelled as project methodologies in unit 9 as compared to unit F160 TA2.1. Waterfall, spiral and agile are common to both specifications.
		11	1.2	Similar content – labelled life cycles in old unit. Waterfall, incremental, iterative, spiral, evolutionary and agile are common to both.
		14	2.1	Some similar content – RAD, agile and spiral are in both specifications. Scrum is in the old specification but not the new.

Cambridge Advanced National (AAQ) Computing: Application Development	Cambridge Technicals Information Technology Level 3: 05838–05842, 05877		

F160 Fundamentals of Application Development

Topic Area number	Topic Area title	Unit number	LO number	Comment
2.2	The common phases of software development models	9	1.2	Some similar content – the phases from unit 9 are similar to those in unit F160 TA2.2. There is some difference to the terms used and the organisation. Implementation in the old unit is referring to creation whilst implementation in F160 refers to deployment methodologies. Document creation is present within F160 but not the old specification.
		9	2.2	The contents of the design phase are expanded in unit 9 as compared to unit F160. There are additional content such as construction, testing, document creation and maintenance included in unit F160.
		11	1.1	The contents of the feasibility study and requirements are expanded in unit 11 as compared to unit F160.
		14	2.2	The contents of the requirements specification is expanded in unit 14 as compared to unit F160.
		14	3	The use of the design specification in the software development model is expanded in unit 14 as compared to unit F160.
3.1	Planning projects	2	4.2	Legislation relating to copyright, data protection and electronic communications from LO4.2 is included in the new unit.
		9	1.3	Constraints are expanded in unit 9 as compared to unit F160.
3.2	Project planning tools	6	3.1	Flowcharts are in the old unit.
		14	3.1	Flowcharts are in the old unit.
4.1	Method of gathering client requirements	6	2.1	Interviews and observation are methods common to the old and new specification.
		11	2.2	Interviews, observation and shadowing are methods common to the old and new specification.

| Cambridge Advanced National (AAQ) Computing: Application Development | | Cambridge Technicals Information Technology Level 3: 05838–05842, 05877 | | |

F160 Fundamentals of Application Development		Unit number	LO number	Comment
Topic Area number	Topic Area title			
4.2	Client requirements specifications	6	2.2	Some similar content – functional, requirements and constraints are expanded in the old specification.
		9	2.1	The expansion of functional and non- functional requirements in the old useful adds additional content to the new unit.
5.1.2	Types of device	1	1.3	Desktop, smartphone and tablet are common to both specifications. Benefits and limitations of devices are not in new specification.
		2	1.3	Some of the devices listed in 5.1.2 are also included in LO1.3 – tablet, smartphone, desktop, smart TV and games console are common to both.
5.2	Human computer interface visual design considerations	15	2.2	There is similar content with regard to interface design – colours, interaction (actions in old specification) and typography.
5.3	Human computer interface design documents and diagrams	2	5.2	Level 0 and Level 1 DFDs are in both specifications.
		6	3.1	DFDs and wireframe designs from the current qualification are represented in the new unit.
6.1	Job Roles	10	1.1	The job role of system analyst is the same.
6.2	Communication skills required in application development	1	4.1	Majority of the content is the same across both units – language, verbal, non-verbal and questioning techniques.

Cambridge Advanced National (AAQ) Computing: Application Development		Cambridge Technicals Information Technology Level 3: 05838–05842, 05877		

F161 Developing Application Software

Topic Area number	Topic Area title	Unit number	LO number	Comment
1.1	Application platforms	2	1.5	There is some similarity in the content of LO1.5 and the characteristics and purpose of WWW and the new unit.
		5	1	There is some similarity in the content of LO1.1 - VR and AR and the new unit.
1.2	Devices	1	1.3	Some of the devices listed in LO1.3 are also included in 1.2 – desktop, server and tablet/hybrid are common to both. Haptic, wearables and console are new.
		2	1.3	Tablet, laptop, desktop, smart TV, console and server are common between the two specifications.
1.3.1	On Site storage locations	2	1.2	There is some similarity between the types of storage media in LO1.2 and the storage locations – SSD and portable storage is common in both units.
		18	1.2	The following storage devices are common to both units: portable devices, SSD, SAN and NAS.
1.3.2	Cloud storage	18	1.2	Cloud storage is part of LO1.2 although the level of knowledge and detail in the old unit is less than that required in the new unit as the types of cloud storage are not broken down in the old unit.
		CC	1.1	Elasticity and scalability are in both old and new units.
		CC	1.2	The four cloud models in Unit CC can be mapped to locations of cloud storage in the new unit.
2.1	Data format and types	2	3.1	The difference between information and data and how it is converted is common to both units.
2.2	Data flow	10	3.1	Whilst there is a similarity between the types of data the new unit breaks them down to a depth not required in the old specification.

Cambridge Advanced National (AAQ) Computing: Application Development	Cambridge Technicals Information Technology Level 3: 05838–05842, 05877		

F161 Developing Application Software

Topic Area number	Topic Area title	Unit number	LO number	Comment
2.3	Data states	3	3.3	An understanding of the terms at rest, in use and in transit is present within LO3.3 although within the concept of cyber security rather than general principles.
3.2	Protocols	1	2.7	The list of protocols are the same in both old and new specifications.
4.1	Security considerations	1	5.3 and 5.4	Threats – hacking and virus are present in both specifications. Physical mitigations, including biometrics, locks and RFID are present in both. Digital mitigations – permissions (access rights) anti-virus (anti malware) encryption and firewalls are present in both.
		2	6.5 and 6.6	The physical and digital mitigation methods are similar across both units - locks, biometrics firewalls, anti-malware and encryption.
		3	3.3	The physical and digital mitigation methods are similar across both units Physical – biometric, swipe cards, cable locks, safe. Digital – firewalls, anti-malware and encryption.
5.1	Testing	9	4.1	User testing from LO4.1 is included in the new unit.
		15	3.3	Elements of testing is similar in both units.
		18	4.1	The test plan structure in LO4.1 is similar to the new unit.
5.2	Types of application software installation	19	1.5	There is a large similarity between the types of application software installation in both units - create ghost/image and deployment, upgrade, clean install, repair/modify installs, remote install and unattended installation.
5.3	Policies	1	5.1 and 5.3	AUP and codes of practice are common to both units.
		13	2.5	AUP is common to both units.

Cambridge Advanced National (AAQ) Computing: Application Development	Cambridge Technicals Information Technology Level 3: 05838–05842, 05877		

F161 Developing Application Software

Topic Area number	Topic Area title	Unit number	LO number	Comment
6.1	Legal considerations	2	4.1	There is a large degree of comparability between the legal considerations in LO4.1 and the new unit – CMA, DPA, PECR, FOI and the role of the ICO.
		3	2.6	There is some degree of comparability between the legal considerations in LO2.6 and the new unit. Whilst acts are not given in the old unit, the DPA and CMA should have been covered and are present in the new specification.
		13	2.5	The DPA is present in LO6.1 and the old Unit 13.
		CC	6.1 and 6.2	The DPA, PECR and CMA is present in LO6.1 and 6.2 and the new unit.

Cambridge Advanced National (AAQ) Computing: Application Development		Cambridge Technicals Information Technology Level 3: 05838–05842, 05877		
F162 Designing and communicating UX/UI solutions				
Topic Area number	Topic Area title	Unit number	LO number	Comment
1.3	UX/UI design principles	15	2.2	The elements of interface design in the new unit map to 2.2 in the old unit, - colour, typography and layout.
1.6	UX/UI interface design standardisation	6	3.2	Standards of protocols, cross platform, interface widgets and interface layouts are common to both specifications.
2.1	Requirements of UX/UI solutions	6	2.2	The expansion of functional and non-functional requirements in the old useful adds additional content to the new unit.
		9	2.1	The expansion of functional and non- functional requirements in the old useful adds additional content to the new unit.
		14	2.2	The expansion of the requirements specification in the old useful adds additional content to the new unit.
2.2	Tools and techniques to document UX/UI ideas and design concepts	6	3.1	Wireframe diagrams in both the old and new units.
3.1.1	Design Tools	6	3.1	Wireframe diagrams, graphical mock-ups and flow charts are in both the old and new units.

Cambridge Advanced National (AAQ) Computing: Application Development	Cambridge Technicals Information Technology Level 3: 05838–05842, 05877	

F163 Game Development

Topic Area number	Topic Area title	Unit number	LO number	Comment
3.2	Technical skills to create game environments and game functionality	14	1.1	The programming techniques used to create the game is similar across both units – functions, procedures, sub routines, variables, selection and iteration.
		15	3.2	The programming techniques used to create the games are similar across both units – variables, constants, inputs, outputs, sequence, selection, iteration, sub routines, conditions and file handling.

Cambridge Advanced National (AAQ) Computing: Application Development		**Cambridge Technicals Information Technology Level 3: 05838–05842, 05877**		
F164 Web Development				
Topic Area number	**Topic Area title**	**Unit number**	**LO number**	**Comment**
1.1	Website principles	1	2.7	Some of the protocols covered in the old unit are relevant to the new one related to W3C compliance.
		21	1.1	There is some similarity between the components of web design from the old unit and website principles from the new one – domain name, W3C compliance, device compliance and platform and browser compliance.
1.4	Webpage components and structure	21	2.2	Elements of websites from the old unit are included in website components and structure in the new – navigational components and responsive design. There is also some comparability between interactive elements and user interactions.
2.1	Planning and design considerations	21	3.2	Interactive elements are included in both units.
4.1	Website prototype testing	21	3.3	There are elements of testing which are common to both units – whilst the testing has different headings in both units and content of what is to be tested is the same.
5.1	Techniques to review the effectiveness of website prototypes	21	3.4	Evaluation against client needs is common to both units.

Cambridge Advanced National (AAQ) Computing: Application Development		Cambridge Technicals Information Technology Level 3: 05838–05842, 05877		
F165 Immersive technology solution development				
Topic Area number	**Topic Area title**	**Unit number**	**LO number**	**Comment**
1.1	Types and uses of immersive technology	5	1.1	There is similarity between the uses of immersive technology in both units - military.
		5	1.2	The areas of use in the old unit and sectors of use in the new unit are comparable – architecture, education, entertainment, health care and surgery, military and sport.
1.2	Immersive technology concepts	5	2.1	Technologies used to support immersive technology are similar across both units – whilst hardware specifications have changed, the basic hardware requirements have not – display, device, sensors and input devices.

Cambridge Advanced National (AAQ) Computing: Application Development

Cambridge Technicals Information Technology Level 3: 05838–05842, 05877

F166 Software Development		Unit number	LO number	Comment
Topic Area number	**Topic Area title**			
1.1	Software design principles	14	1.1	Some of the programming constructs from the old unit are included in the software design principles in the new unit – modules, procedures, functions, classes properties and methods.
2.1.1	Software Design Specifications (SDS)	6	2.2	The expansion of functional and non- functional requirements in the old useful adds additional content to the new unit
2.1.2	Software Design Documentation (SDD)	2	5.2	The understanding and application requirements of DFDs are the same across both units.
		6	3.1	Wireframe diagrams in both the old and new units.
3.1.1	Programming techniques to develop software solutions	14	1.1	Some of the programming constructs from the old unit are included in the software design principles in the new unit: Data types – integer, floating point, string, Boolean and converting between data types. Selection routines - If Then Else, Else If/ElseIf and End If. Iteration - fixed Loop, conditional Loop, pre-condition and post condition. Modules – procedures, functions, classes, properties and methods and parameter passing and return values - byref and byval and setters and getters.

New content not in the Cambridge Technical specification

Cambridge Advanced National unit number	Cambridge Advanced National unit	Cambridge Advanced National Topic Area number	Cambridge Advanced National Topic Area
F160	Fundamentals of Application Development	2.2	Implementation methods
		3.2	Arrow diagram Critical Path Analysis (CPA)/Critical Path Method (CPM) Gantt charts PERT charts Strengths/Weaknesses/Opportunities/Threats (SWOT) analysis
		4.3	Decomposition methods
		5.1	Types of human computer interaction
		5.2	Colours Interaction Location hierarchy Messages Help Error Typography Style Size
F161	Developing Application Software	2.1	Data formats American Standard Code for Information Interchange (ASCII) Comma-separated Values (CSV) Fixed width JavaScript Object Notation (JSON) Extensible Markup Language (XML)
		2.2	Data flow Black box concepts
		3.1	Application Programming Interfaces (API)

Cambridge Advanced National unit number	Cambridge Advanced National unit	Cambridge Advanced National Topic Area number	Cambridge Advanced National Topic Area
F162	Designing and communicating UX/UI solutions	1.1	Basics of UX and UI
		1.2	Application end user considerations
		1.4	UX/UI design psychology
		1.5.1	Factors that impact UX
		1.5.2	Features of UI
		2.2	Tools to document ideas
		3.1.1	Design tools: Diagrams UX/UI design features
		3.1.2	Software Tools
		3.2	Tools and techniques to check UX/UI solution designs
		4.1	Develop UX/UI solution showcases
		5.1	Review the fitness for purpose of UX/UI solutions
		5.2	Improvements to UX/UI solutions
		5.3	Review the processes used to plan, design and communicate UX/UI solutions

Cambridge Advanced National unit number	Cambridge Advanced National unit	Cambridge Advanced National Topic Area number	Cambridge Advanced National Topic Area
F163	Game Development	1.1.1	Types of Games
		1.1.2	Genres of Games
		1.1.3	Gaming platforms
		1.1.4	Pan European Game Information (PEGI) Certificates
		1.2.1	Game concept
		1.2.2	Game and gameplay elements
		1.2.3	Game assets
		1.2.4	Game mechanics
		2.1.1	Game design documents (GDDs)
		2.1.2	Game planning and design tools
		3.1	Tools and techniques to source and prepare assets
		4.1	Game prototype testing
		5.1	Techniques to review the fitness for purpose of game prototypes
		5.2.1	Improvements to, and further developments for, game prototypes
		5.2.2	Further development opportunities
F164	Website development	1.2	Purpose of websites
		1.3	Website types
		1.5	Search Engine Optimisation (SEO) techniques
		2.2	Tools to plan and design website prototypes
		3.1	Tools and techniques to create website structures
		3.2	Techniques to source and prepare assets
		3.3	Technical skills to create website pages
		5.2.1	Constraints and improvements
		5.2.2	Further development opportunities

Cambridge Advanced National unit number	Cambridge Advanced National unit	Cambridge Advanced National Topic Area number	Cambridge Advanced National Topic Area
F165	Immersive technology solution development	2.1	Planning and design considerations
		2.2	Tools to plan and design immersive technology prototypes
		3.1	Techniques to source and prepare assets
		3.2	Software features and techniques to create immersive technology prototypes
		4.1	Immersive technology prototype testing
		5.1	Techniques to review the effectiveness of immersive technology prototypes
		5.2.1	Improvements
		5.2.2	Further development opportunities
F166	Software Development	3.2	Technical skills to create software solutions
		4.1	Software solution testing
		5.1	Techniques to review the fitness for purpose of software solutions
		5.2.1	Constraints and improvements
		5.2.2	Further development opportunities

Cambridge Technical content not in the Cambridge Advanced National

Cambridge Technical unit number	Cambridge Technical unit title	Cambridge Technical LO number	Cambridge Technical LO title
1	Fundamentals of IT	LO1 1.1, 1.2, 1.4, 1.5, 1.6, 1.7, 1.8, 1.9	Understand Computer Hardware
		LO2 2.3, 2.4, 2.5, 2.6	Understand Computer Software
		LO3 3.1, 3.2, 3.3, 3.4, 3.5	Understand business IT systems
		LO4 4.2, 4.3, 4.4, 4.5, 4.6, 4.7	Understand employability and communication skills used in an IT environment
		LO5 5.2, 5.4, 5.5	Understand ethical and operational issues and threats to computer systems
2	Global Information	LO1 1.1, 1.4, 1.6, 1.7, 1.8	Understand where information is held globally and how it is transmitted
		LO2 2.1, 2.2, 2.3. 2.4	Understand the styles, classification and the management of global information
		LO3 3.2, 3.3, 3.4, 3.5, 3.6	Understand the use of global information and the benefits to individuals and organisations
		LO4 4.3	Understand the legal and regulatory framework governing the storage and use of global information
		LO5 5.1	Understand the process flow of information
		LO6 6.1, 6.2, 6.3, 6.4	Understand the principles of information security

Cambridge Technical unit number	Cambridge Technical unit title	Cambridge Technical LO number	Cambridge Technical LO title
3	Cyber Security	LO1 1.1, 1.2, 1.3	Understand what is meant by cyber security
		LO2 2.1, 2.2, 2.3, 2.4, 2.5	Understand the issues surrounding cyber security
		LO3 3.1, 3.2	Understand measures to protect against cyber security incidents
		LO4 4.1, 4.2	Understand how to manage cyber security incidents.
4	Computer Networks	LO1 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 1.9, 1.10, 1.11	Understand the concept of networks
		LO2 2.1, 2.2, 2.3, 2.4, 2.5, 2.6	Be able to plan computer networks to meet client requirements
		LO3 3.1, 3.2	Be able to present network solutions to clients
		LO4 4.1, 4.2, 4.3, 4.4, 4.5, 4.6	Be able to plan maintenance activities for computer networks
5	Virtual and augmented reality	LO1 1.3	Understand virtual and augmented reality and how they may be used
		LO2 2.2	Be able to design virtual and augmented reality resources
		LO3 3.1, 3.2, 3.3	Be able to create a virtual or augmented reality resource
		LO4 4.1, 4.2	Be able to predict future applications for virtual and augmented reality

Cambridge Technical unit number	Cambridge Technical unit title	Cambridge Technical LO number	Cambridge Technical LO title
6	Application Design	LO1 1.1	Understand how applications are designed
		LO2 2.3, 2.4	Be able to investigate potential solutions for application developments
		LO3 3.3, 3.4	Be able to generate designs for application solutions
		LO4 4.1, 4.2, 4.3, 4.4, 4.5, 4.6	Be able to present application solutions to meet client and user requirements
7	Data Analysis and Design	LO1 1.1, 1.2, 1.3	Understand the purpose and stages of data analysis and design
		LO2 2.1, 2.2, 2.3, 2.4	Be able to investigate client requirements for data analysis
		LO3 3.1, 3.2	Be able to develop data design solutions to meet business requirements.
		LO4 4.1, 4.2, 4.3	Be able to present data analysis and design solutions to stakeholders
8	Project Management	LO1 1.2, 1.3, 1.4	Understand the project life cycle
		LO2 2.1, 2.2	Be able to initiate and plan projects
		LO3 3.1	Be able to execute projects
		LO4 4.1	Be able to carry out project evaluations
9	Product Development	LO3 3.1	Be able to implement and test products
		LO4 4.2	Be able to carry out acceptance testing with clients

Cambridge Technical unit number	Cambridge Technical unit title	Cambridge Technical LO number	Cambridge Technical LO title
10	Business Computing	LO1 1.3	Know the attributes required for data analyst job roles
		LO2 2.1, 2.3, 2.4	Be able to capture and store data for analysis
		LO3 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8, 3.9	Be able to use tools to edit and analyse data
		LO4 4.1, 4.2, 4.3, 4.4	Be able to present data analysis outcomes
11	Systems Analysis and Design	LO1 1.1, 1.2	Understand the role of systems analysis and design in relation to the systems development lifecycle
		LO2 2.1, 2.2	Be able to use investigative techniques to establish requirements for business systems
		LO3 3.1, 3.2	Be able to develop and document models for business systems
		LO4 4.1, 4.2, 4.3	Be able to create logical and physical designs for specified business systems
12	Mobile Technology	LO1 1.1, 1.2, 1.3, 1.4	Understand mobile technologies
		LO2 2.1, 2.2	Be able to investigate how businesses use mobile technologies
		LO3 3.1, 3.2, 3.3	Be able to determine solutions for the use of mobile technologies
		LO 4.1, 4.2, 4.3	Be able to present solutions for the use of mobile technologies

Cambridge Technical unit number	Cambridge Technical unit title	Cambridge Technical LO number	Cambridge Technical LO title
13	Social Media and Digital Marketing	LO1 1.1, 1.2, 1.3, 1.4, 1.5	Understand digital marketing
		LO2 2.1, 2.2, 2.3, 2.4, 2.6	Understand the use of social media in business
		LO3 3.1, 3.2, 3.3, 3.4	Be able to plan content and propose appropriate social media channels for digital marketing campaigns
		LO4 4.1, 4.2, 4.3, 4.4	Be able to develop social media digital marketing campaigns
14	Software Engineering for Business	LO3 3.3	Be able to develop software solutions to meet business requirements
15	Games Design and Prototyping	LO1 1.1, 1.2, 1.3	Understand the principles of game design and prototyping
		LO2 2.1, 2.3, 2.4, 2.5, 2.6	Be able to develop game concepts
		LO3 3.1	Be able to develop game prototypes
		LO4 4.1, 4.2	Be able to present and evaluate game concepts
16	Developing a Smarter Planet	LO1 1.1, 1.2, 1.3, 1.4, 1.5	Understand what is meant by a Smarter Planet
		LO2 2.1, 2.2, 2.3	Be able to propose ways to extend the scope of the Smarter Planet
		LO3 3.1, 3.2, 3.3	Be able to present, refine and evaluate Smarter Planet concepts

Cambridge Technical unit number	Cambridge Technical unit title	Cambridge Technical LO number	Cambridge Technical LO title
17	Internet of Everything	LO1 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 1.9, 1.10, 1.11, 1.12, 1.13, 1.14, 1.15	Understand what is meant by the Internet of Everything (IoE)
		LO2 2.1, 2.2	Be able to repurpose technologies to extend the scope of the IoE
		LO3 3.1, 3.2, 3.3, 3.4, 3.5, 3.6	Be able to present concept ideas for repurposed developments
18	Computer Systems Hardware	LO1 1.1	Understand the components of a computer system
		LO2 2.1, 2.2, 2.3, 2.4, 2.5	Be able to propose computer systems for identified business requirements
		LO3 3.1, 3.2, 3.3	Be able to build or upgrade computers
		LO4 4.2, 4.3	Be able to test and evaluate the functionality of computer systems
19	Computer Systems Software	LO1 1.1, 1.2, 1.3, 1.4	Understand different software installations and their purpose
		LO2 2.1, 2.2	Be able to implement software installations and upgrades to meet specified user requirements
		LO3 3.1, 3.2, 3.3, 3.4	Be able to conduct system maintenance using utility software

Cambridge Technical unit number	Cambridge Technical unit title	Cambridge Technical LO number	Cambridge Technical LO title
20	IT Technical Support	LO1 1.1, 1.2, 1.3, 1.4	Understand the role of technical support
		LO2 2.1, 2.2, 2.3, 2.4	Be able to diagnose faults and solutions for computer systems
		LO3 3.1, 3.2, 3.3	Be able to provide advice and guidance to specific customers
21	Web Design and Prototyping	LO1 1.2	Understand the fundamentals of web design
		LO2 2.1	Be able to plan the development of an interactive website for an identified client
		LO3 3.1	Be able to create prototype websites for an identified client
		LO4 4.1, 4.2	Be able to present the interactive website concept to an identified client
22	Big Data Analytics	LO1 1.1, 1.2, 1.3, 1.4	Understand the scope and challenges of Big Data
		LO2 2.1, 2.2, 2.3, 2.4, 2.5	Be able to process Big Data for business purposes
		LO3 3.1	Be able to provide information resulting from processing Big Data
23	Cognitive Computing	LO1 1.1, 1.2, 1.3	Know how cognitive computing is used in business
		LO2 2.1	Be able to investigate opportunities for the positive application of cognitive computing
		LO3 3.1, 3.2, 3.3	Be able to generate business proposals for an identified application of cognitive computing

Cambridge Technical unit number	Cambridge Technical unit title	Cambridge Technical LO number	Cambridge Technical LO title
24	Enterprise Computing	LO1 1.1, 1.2	Understand the concept of enterprise computing systems
		LO2 2.1	Be able to investigate business requirements for an enterprise computer solution
		LO 3.1, 3.2, 3.3, 3.4	Be able to develop enterprise computing solutions to meet business requirements
		LO4 4.1, 4.2	Be able to review the enterprise computing solution with stakeholders
CC	Cloud Technology	LO1 1.3, 1.4, 1.5	Understand the characteristics and context of cloud technology and why it is used
		LO2 2.1, 2.2, 2.3, 2.4	Understand the business benefits of cloud services
		LO3 3.1, 3.2, 3.3, 3.4	Understand the requirements of cloud services
		LO4 4.1, 4.2, 4.3, 4.4, 4.5	Understand the features of cloud storage
		LO5 5.1, 5.2, 5.3, 5.4	Understand the deployment requirements for cloud-based services for organisations
		LO7 7.1, 7.2, 7.3, 7.5	Know about impact, risks and security issues related to cloud technology

Appendix

Cambridge Technical qualification units and learning outcome (LO) titles

Unit number	Unit title	LO number	LO title
1	Fundamentals of IT	LO1	Understand Computer Hardware
		LO2	Understand Computer Software
		LO3	Understand business IT systems
		LO4	Understand employability and communication skills used in an IT environment
		LO5	Understand ethical and operational issues and threats to computer systems
2	Global Information	LO1	Understand where information is held globally and how it is transmitted
		LO2	Understand the styles, classification and the management of global information
		LO3	Understand the use of global information and the benefits to individuals and organisations
		LO4	Understand the legal and regulatory framework governing the storage and use of global information
		LO5	Understand the process flow of information
		LO6	Understand the principles of information security
3	Cyber Security	LO1	Understand what is meant by cyber security
		LO2	Understand the issues surrounding cyber security
		LO3	Understand measures to protect against cyber security incidents
		LO4	Understand how to manage cyber security incidents.
4	Computer Networks	LO1	Understand the concept of networks
		LO2	Be able to plan computer networks to meet client requirements
		LO3	Be able to present network solutions to clients
		LO4	Be able to plan maintenance activities for computer networks

Unit number	Unit title	LO number	LO title
5	Virtual and augmented reality	LO1	Understand virtual and augmented reality and how they may be used
		LO2	Be able to design virtual and augmented reality resources
		LO3	Be able to create a virtual or augmented reality resource
		LO4	Be able to predict future applications for virtual and augmented reality
6	Application Design	LO1	Understand how applications are designed
		LO2	Be able to investigate potential solutions for application developments
		LO3	Be able to generate designs for application solutions
		LO4	Be able to present application solutions to meet client and user requirements
7	Data Analysis and Design	LO1	Understand the purpose and stages of data analysis and design
		LO2	Be able to investigate client requirements for data analysis
		LO3	Be able to develop data design solutions to meet business requirements.
		LO4	Be able to present data analysis and design solutions to stakeholders
8	Project Management	LO1	Understand the project life cycle
		LO2	Be able to initiate and plan projects
		LO3	Be able to execute projects
		LO4	Be able to carry out project evaluations
9	Product Development	LO1	Understand the product development life cycle
		LO2	Be able to design products that meet identified client requirements
		LO3	Be able to implement and test products
		LO4	Be able to carry out acceptance testing with clients
10	Business Computing	LO1	Know the attributes required for data analyst job roles
		LO2	Be able to capture and store data for analysis
		LO3	Be able to use tools to edit and analyse data
		LO4	Be able to present data analysis outcomes

Unit number	Unit title	LO number	LO title
11	Systems Analysis and Design	LO1	Understand the role of systems analysis and design in relation to the systems development lifecycle
		LO2	Be able to use investigative techniques to establish requirements for business systems
		LO3	Be able to develop and document models for business systems
		LO4	Be able to create logical and physical designs for specified business systems
12	Mobile Technology	LO1	Understand mobile technologies
		LO2	Be able to investigate how businesses use mobile technologies
		LO3	Be able to determine solutions for the use of mobile technologies
		LO4	Be able to present solutions for the use of mobile technologies
13	Social Media and Digital Marketing	LO1	Understand digital marketing
		LO2	Understand the use of social media in business
		LO3	Be able to plan content and propose appropriate social media channels for digital marketing campaigns
		LO4	Be able to develop social media digital marketing campaigns
14	Software Engineering for Business	LO1	Understand universal programming constructs
		LO2	Be able to investigate business requirements for programming solutions
		LO3	Be able to develop software solutions to meet business requirements
		LO4	Be able to propose software solutions to meet business requirements
15	Games Design and Prototyping	LO1	Understand the principles of game design and prototyping
		LO2	Be able to develop game concepts
		LO3	Be able to develop game prototypes
		LO4	Be able to present and evaluate game concepts
16	Developing a Smarter Planet	LO1	Understand what is meant by a Smarter Planet
		LO2	Be able to propose ways to extend the scope of the Smarter Planet
		LO3	Be able to present, refine and evaluate Smarter Planet concepts

Unit number	Unit title	LO number	LO title
17	Internet of Everything	LO1	Understand what is meant by the Internet of Everything (IoE)
		LO2	Be able to repurpose technologies to extend the scope of the IoE
		LO3	Be able to present concept ideas for repurposed developments
18	Computer Systems Hardware	LO1	Understand the components of a computer system
		LO2	Be able to propose computer systems for identified business requirements
		LO3	Be able to build or upgrade computers
		LO4	Be able to test and evaluate the functionality of computer systems
19	Computer Systems Software	LO1	Understand different software installations and their purpose
		LO2	Be able to implement software installations and upgrades to meet specified user requirements
		LO3	Be able to conduct system maintenance using utility software
20	IT Technical Support	LO1	Understand the role of technical support
		LO2	Be able to diagnose faults and solutions for computer systems
		LO3	Be able to provide advice and guidance to specific customers
21	Web Design and Prototyping	LO1	Understand the fundamentals of web design
		LO2	Be able to plan the development of an interactive website for an identified client
		LO3	Be able to create prototype websites for an identified client
		LO4	Be able to present the interactive website concept to an identified client
22	Big Data Analytics	LO1	Understand the scope and challenges of Big Data
		LO2	Be able to process Big Data for business purposes
		LO3	Be able to provide information resulting from processing Big Data
23	Cognitive Computing	LO1	Know how cognitive computing is used in business
		LO2	Be able to investigate opportunities for the positive application of cognitive computing
		LO3	Be able to generate business proposals for an identified application of cognitive computing

Unit number	Unit title	LO number	LO title
24	Enterprise Computing	LO1	Understand the concept of enterprise computing systems
		LO2	Be able to investigate business requirements for an enterprise computer solution
		LO3	Be able to develop enterprise computing solutions to meet business requirements
		LO4	Be able to review the enterprise computing solution with stakeholders
CC	Cloud Technology	LO1	Understand the characteristics and context of cloud technology and why it is used
		LO2	Understand the business benefits of cloud services
		LO3	Understand the requirements of cloud services
		LO4	Understand the features of cloud storage
		LO5	Understand the deployment requirements for cloud-based services for organisations
		LO6	Know regulatory issues that impact cloud technology
		LO7	Know about impact, risks and security issues related to cloud technology