2016 Suite

OCR
Oxford Cambridge and RSA

Cambridge **TECHNICALS LEVEL 3**

Cambridge TECHNICALS 2016

IT

Unit 24

Enterprise computing

L/615/1131

Guided learning hours: 60

Version 2: September 2016

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LEVEL 3

UNIT 24: Enterprise computing

L/615/1131

Guided learning hours: 60

Essential resources required for this unit: None

This unit is internally assessed and externally moderated by OCR.

UNIT AIM

Enterprise computing is sold to business users as an entire solution that can be applied broadly across an organisation and then further customised by users within each business function. This means the analytics, reporting, database management and other applications are standard across the system, whilst the application packages used and the data accessed in each business function will be different. In this sense, enterprise computing is a departure from finding single software solutions to specific business problems, such as inventory or accounting software. Instead, enterprise computing is intended to offer integrated solutions to these problems. Enterprise computing is a concept for software and hardware solutions designed to meet the needs of large global organisations.

This unit will require you to carry out research based on a scenario. Your research will incorporate the knowledge, skills and understanding that you have obtained within your selected pathway i.e. Digital Technician or Application Data Technician. You will be evaluating a global organisation and making recommendations on how enterprise computing could be used to support their business needs. Therefore, it is important that this unit is carried out synoptically when you have secured the relevant knowledge, skills and understanding from other units.

This unit is mandatory in both specialist pathways in the Level 3 Extended Diploma.

TEACHING CONTENT

The teaching content in every unit states what has to be taught to ensure that learners are able to access the highest grades.

Anything which follows an i.e. details what must be taught as part of that area of content. Anything which follows an e.g. is illustrative. It should be noted that where e.g. is used, learners must know and be able to apply relevant examples in their work, although these do not need to be the same ones specified in the unit content.

For internally assessed units you need to ensure that any assignments you create, or any modifications you make to an assignment, do not expect the learner to do more than they have been taught, but must enable them to access the full range of grades as described in the grading criteria.

Learning outcomes **The Learner will:**	**Teaching content** **Learners must be taught:**
1. Understand the concept of enterprise computing systems	1.1 Enterprise computing i.e. • business-oriented information technology solution • software and hardware solutions designed for global application • highly secure with multi-layered access requirements • easily customised platform • flexible access for user and organisations to IT assets • integrated solutions to business problems 1.2 Requirements and purpose i.e. • high level of reliability and functionality o including built-in redundancies (business can still operate should one system fail) • high level of security i.e. o ability to set carried access profiles for specific multi-users o must include: ▪ authentication ▪ access control ▪ data integrity ▪ data privacy ▪ non-repudiation (mechanism to prove user performance that cannot be denied by the user at a later stage) ▪ auditing • central data storage o collects and organises data from entire organisation regardless of location o access control according to security protocols • high level of scalability and adaptability e.g. ability to add and customise applications as and when required • high level of accessibility (e.g. users are not kept waiting for access) • potential platform and software independence

Learning outcomes The Learner will:	Teaching content Learners must be taught:

2. Be able to investigate business requirements for an enterprise computer solution	2.1 Business requirements i.e.
	• purpose
	• intended outcome (to include intended locations of access)
	• intended users
	• personalised user experience (e.g. represent business concepts to any user) i.e.
	  • the users i.e.
	  o local
	  o international
	  o global
	  • types of interface e.g.
	  o another application within the same business
	  o interface for business clients
	  o Web interface for customers
	  • an appropriate window for each audience i.e.
	  o without duplication of:
	  ▪ systems
	  ▪ effort to capture the business rules

3. Be able to develop enterprise computing solutions to meet business requirements	3.1 Outline scope to include: • objectives • goals • sub-phases • tasks • resources • budget • schedule • advantages/benefits • disadvantages 3.2 Logical design i.e. • platform independent • inputs • outputs • processes • data Physical design i.e. • platform dependent • hardware, e.g. Intel, AMD, HP, Sun, Apple, IBM • software e.g. operating systems, Java, .Net Framework • implementation environment, e.g. web browser

Learning outcomes The Learner will:	Teaching content Learners must be taught:
	3.3 Business benefits i.e. • operational efficiency (through virtualisation, workload management and larger I/O throughput) • systems' utilisation • greener computing (highly efficient designs deliver highly scalable service from a single system) • reduction in production time (can link to improved customer satisfaction) • increased productivity • reduced operational cost (less staff may be required due to automated systems) • enables growth and supports the competitive market • improved customer satisfaction 3.4 Security characteristics i.e. • **authentication** – the means by which communicating entities prove to one another that they are acting on behalf of specific identities • **access control for sensitive resources** – the means by which interactions with vital resources are limited to collections of users or programs for the purpose of enforcing integrity, confidentiality, or availability constraints • **data integrity** – the means used to confirm that information has not been tampered with by a third party. A recipient of data sent over an open network must be able to check whether the data gets altered on its way • **data privacy** – the means used to ensure that information is made available only to users who are authorised to access it • **non-repudiation** – the means used to prove that a user performed some transaction such that the user cannot deny it later • **auditing** – the means used to capture a tamper-resistant record of security-related events for the purpose of being able to evaluate the effectiveness of security policies and mechanisms
4. Be able to review the enterprise computing solution with stakeholders	4.1 Presentation of solution e.g. • reflects all aspects of design • meets business needs • understood by audience (e.g. level of technical jargon used) • format (e.g. report or presentation supported by diagrams or models) 4.2 Evaluation of design solution (e.g. meets business requirements, achievable, manageable, extendable, secure, customisable, user personalisation)

GRADING CRITERIA

Learning Outcome (LO)	Pass	Merit	Distinction
	The assessment criteria are the Pass requirements for this unit.	To achieve a Merit the evidence must show that, in addition to the Pass criteria, the learner is able to:	To achieve a Distinction the evidence must show that, in addition to the pass and merit criteria, the learner is able to:
1. Understand the concept of enterprise computing systems	P1: Explain the term enterprise computing	M1: Explain the requirements of an enterprise computing solution	
2. Be able to investigate business requirements for an enterprise computer solution	P2: Recommend an enterprise computing solution for business requirements		
3. Be able to develop enterprise computing solutions to meet business requirements	P3: Create an outline scope for a proposed enterprise solution to meet identified business requirements	M2: Justify the business benefits from the proposed solution	D1: Analyse the security characteristics that the proposed solution must include
	P4: Produce a logical or physical design for the scoped enterprise solution		
4. Be able to review the enterprise computing solution with stakeholders	P5: Present the proposed enterprise solution to stakeholders	M3: Refine the proposed solution based on stakeholder feedback	D2: Evaluate the proposed solution against the original specified business requirements

ASSESSMENT GUIDANCE

LO1 Understand the concept of enterprise computing systems

To aid the assessment of this particular learning outcome, it is important that learners have had the opportunity to look at a variety of businesses where enterprise computing has been or could be implemented. This should help them to use examples to support their descriptions and explanations.

P1: Learners must explain the term Enterprise Computing. What does it mean and how does it work?

M1: Learners must explain the requirements of an enterprise computing solution. There are certain requirements that must be met when considering the development and deployment of enterprise computing. It is important that the learners show that they have a clear understanding of these by explaining what they are and their purpose.

LO2 Be able to investigate business requirements for an enterprise computer solution

To aid the assessment of this particular learning outcome, it is important that learners investigate the information provided about the business that is considering enterprise computing.

P2: Learners must recommend an enterprise computing solution for business requirements. They should consider all aspects of a business's requirements. They will then be better informed when providing an overview of how enterprise computing will benefit the business and support its users. It is important that they include all potential users whether they are internal or external to a business.

LO3 Be able to develop enterprise computing solutions to meet business requirements

To aid the assessment of this particular learning outcome, it is important that learners refer back to the investigation that they carried out in LO2.

P3: Learners must create an outline scope for a proposed enterprise solution to meet identified business requirements. Learners should consider whether they want to produce a broad scope with less detail or a narrow scope with greater detail.

P4: Learners must produce a logical or physical design for the scoped enterprise solution. This follows on from P3 and the learners have a choice of whether they produce a logical design or a physical design of the enterprise solution for which they provided an outline scope in P2. Learners should consider in detail all criteria for the proposed design type.

M2: Learners must justify the business benefits from the proposed solution, this can be as an extension to P2 and/or P3. The justification should provide the business with a reasoned case as to how the proposed solution will be of benefit to the business. Learners should consider the full range of benefits.

D1: Learners must analyse the security characteristics that the proposed solution must include. The learners should include all aspects of security and be able to refer to the advantages and disadvantages of each characteristic and make a reasoned comment as to why it is important that they are included or excluded.

LO4 Be able to review the enterprise computing solution with stakeholders

P5: Learners must present the proposed enterprise solution to stakeholders. It could be a formal presentation, and could potentially be videoed, with a copy of the presentation and speaker notes provided. Alternatively, the learner could produce a formal report. Learners should have had plenty of experience of presenting their enterprise solutions from other units where they have presented their designs and/or prototypes etc.

M3: Learners must refine the proposed solution based on stakeholder feedback. The evidence should include feedback provided by the stakeholders. (It should be noted that stakeholders should be people who have a good understanding of business requirements and enterprise computing. Stakeholders should not be other members of the learner's group.) The learner is also required to show how they have refined their proposed solution based on the feedback. The refinements should include the changes made to the logical or physical design that they produced.

D2: Learners must evaluate the proposed solution against the original specified business requirements identified in P2. The evaluation should include qualitative judgments based on the learner taking different factors into account (e.g. is the proposed solution extendable, manageable and achievable as well as the other obvious factors identified by the business). This could be in the format of a report of presentation.

Feedback to learners: you can discuss work-in-progress towards summative assessment with learners to make sure it's being done in a planned and timely manner. It also provides an opportunity for you to check the authenticity of the work. You must intervene if you feel there's a health and safety risk.

Learners should use their own words when producing evidence of their knowledge and understanding. When learners use their own words it reduces the possibility of learners' work being identified as plagiarised. If a learner does use someone else's words and ideas in their work, they must acknowledge it, and this is done through referencing. Just quoting and referencing someone else's work will not show that the learner knows or understands it. It has to be clear in the work how the learner is using the material they have referenced **to inform their** thoughts, ideas or conclusions.

For more information about internal assessment, including feedback, authentication and plagiarism, see the centre handbook. Information about how to reference is in the OCR *Guide to Referencing* available on our website: http://www.ocr.org.uk/i-want-to/skills-guides/.

SYNOPTIC ASSESSMENT AND LINKS BETWEEN UNITS

When learners are taking an assessment task, or series of tasks, for this unit, they will have opportunities to draw on relevant, appropriate knowledge, understanding and skills that they will have developed through other units. We've identified those opportunities in the table below. Learners should be encouraged to consider for themselves which skills/knowledge/understanding are most relevant to apply where we have placed an asterisk.

This unit and specific LO	Name of other unit and related LO
LO1: Understand the concept of enterprise computing systems	Unit 1: Fundamentals of IT – LO1, LO2, LO3, LO5 Unit 2: Global Information – LO1, LO2, LO3, LO4, LO5, LO6 Unit 4: Computer Networks – LO1 Unit 18: Computer Systems – Hardware – LO1 Unit 19: Computer Systems Software – LO1 Unit 20: IT Technical Support – LO1 Unit 22: Big Data Analytics – LO1 Unit 23: Cognitive Computing – LO1
LO2: Be able to investigate business requirements for an enterprise computer solution	Unit 2: Global Information – LO1, LO2, LO3, LO4, LO5, LO5 Unit 3: Cyber Security – LO1, LO2, LO3, LO4 Unit 4: Computer Networks – LO1 Unit 5: Augmented and Virtual Reality – LO1 Unit 6: Application Design – LO1, LO2 Unit 7: Data Analysis and Design – LO1, LO2 Unit 9: Product Development – LO1 Unit 10: Business Computing – LO2 Unit 11: Systems Analysis and Design – LO1, LO2 Unit 12: Mobile Technology – LO1, LO2 Unit 13: Social Media and Digital Marketing – LO1, LO2 Unit 14: Software Engineering for Business – LO2 Unit 15: Games Design and Prototyping – LO1 Unit 16: Developing a Smarter Planet – LO1 Unit 17: Internet of Everything – LO1 Unit 18: Computer Systems – Hardware – LO1 Unit 19 – Computer Systems Software – LO1, LO2 Unit 20 – IT Technical Support – LO1 Unit 21 – Web Design & Prototyping – LO1, LO2 Unit 22: Big Data Analytics – LO1 Unit 23: Cognitive Computing – LO2

This unit and specific LO	Name of other unit and related LO
LO3: Be able to develop enterprise computing solutions to meet business requirements	Unit 4: Computer Networks – LO2, LO4 Unit 5: Augmented and Virtual Reality – LO2 Unit 6: Application Design – LO3 Unit 7: Data Analysis and Design – LO3 Unit 9: Product Development – LO2, LO3 Unit 10: - Business Computing – LO3 Unit 11: Systems Analysis and Design – LO3, LO4 Unit 12: Mobile Technology – LO3 Unit 13: Social Media and Digital Marketing – LO3, LO4 Unit 14: Software Engineering for Business – LO3 Unit 15: Games Design and Prototyping – LO2, LO3 Unit 17: Internet of Everything – LO2 Unit 18: Computer Systems – Hardware – LO1, LO2 Unit 20 – IT Technical Support – LO1 Unit 21 – Web Design & Prototyping – LO1, LO2, LO3 Unit 22: Big Data Analytics – LO2, LO3 Unit 23: Cognitive Computing – LO2, LO3
LO4: Be able to review the enterprise computing solution with stakeholders	Unit 4: Computer Networks – LO3 Unit 5: Augmented and Virtual Reality – LO3, LO4 Unit 6: Application Design – LO4 Unit 7: Data Analysis and Design – LO4 Unit 9: Product Development - LO4 Unit 10: Business Computing – LO4 Unit 11: Systems Analysis and Design – LO4 Unit 12: Mobile Technology – LO4 Unit 14: Software Engineering for Business – LO4 Unit 15: Games Design and Prototyping – LO4 Unit 16: Developing a Smarter Planet – LO2, LO3 Unit 17: Internet of Everything – LO3 Unit 18: Computer Systems – Hardware – LO2 Unit 20 – IT Technical Support – LO1 Unit 21 – Web Design & Prototyping – LO4 Unit 23: Cognitive Computing – LO2, LO3

Synoptic assessment grid

Core unit	Core taught content	Assessment criteria in this unit
Unit 1 – Fundamentals of Computing	LO1 – Understand computer hardware	P1, P2, P3, P4, M1, M2
Unit 1 – Fundamentals of Computing	LO2 – Understand computer software	P1, P2, P3, P4, M1, M2
Unit 1 – Fundamentals of Computing	LO3 – Understand business IT systems	P2, P3, P4, M1, M2, M3
Unit 1 – Fundamentals of Computing	LO4 – Understand employability and communication skills used in an IT environment	P4, P5 P56, M2, M3, D2
Unit 1 – Fundamentals of Computing	LO5 – Understand ethical and operations issues and threats to computer systems	P1, P2, P3, P4, P5, M1, M2, M3, D1
Unit 2 – Global Information	LO1 – Understand where information is held globally and how it is transmitted	P1, M1
Unit 2 – Global Information	LO2 – Understand the styles, classification and the management of global information	P3, P4, P5, M2, M3
Unit 2 – Global Information	LO3 – Understand the use of global information and the benefits to individuals and organisations	P1, P2, M1, M2, M3, D2
Unit 2 – Global Information	LO4 – Understand the legal and regulatory framework governing the storage and use of global information	P1, M1, D1
Unit 2 – Global Information	LO5 – Understand the process flow of information	P2, P3, P4, P5, M2, M3
Unit 2 – Global Information	LO6 – Understand the principles of information security	M1, D1
Unit 3 – Cyber Security	LO1 – Understand what is meant by cyber security	P1, P2, P3, P4, P5, M1, M2, D1
Unit 3 – Cyber Security	LO2 – Understand the issues surrounding cyber security	P1, P2, P3, P4, P5, M1, M2, D1
Unit 3 – Cyber Security	LO3 – Understand measures used to protect against cyber security incidents	P1, P2, P3, P4, P5, M1, M2, D1
Unit 3 – Cyber Security	LO4 – Understand how to manage cyber security incidents	P1, P2, P3, P4, P5, M1, M2, D1
Unit CC* – Cloud Technology	LO1 – Know the characteristics and context of the use of cloud computing	P1, P2, P3, P4, M1, M2, D2
Unit CC* – Cloud Technology	LO2 – Know about cloud services	P1, P2, P3, P4, M1, M2, D2

Core unit	Core taught content	Assessment criteria in this unit
Unit CC* – Cloud Technology	LO3 – Know about the business benefits of the cloud	P5, M2, M3
Unit CC* – Cloud Technology	LO4 – Know what to consider when deploying cloud-based services for an organisation	P1, P2, P3, P4, P5, M1, M3, D2
Unit CC* – Cloud Technology	LO5 – Know regulatory issues that impact cloud computing	P2, P3, P4, P5, M1, M2, D1, D2
Unit CC* – Cloud Technology	LO6 – Know the impact, risks and security issues related to using cloud computing	P2, P3, P4, D1
Unit CC* – Cloud Technology	Know about cloud storage	P1, P2, P3, P4, P5, M1, M2, M3, D1, D2

*Formerly Unit 25

MEANINGFUL EMPLOYER INVOLVEMENT - a requirement for the Extended Diploma (Tech Level) qualifications

The 'Diploma' qualifications have been designed to be recognised as Tech Levels in performance tables in England. It is a requirement of these qualifications for centres to secure for every learner employer involvement through delivery and/or assessment of these qualifications.

The minimum amount of employer involvement must relate to at least one or more of the elements of the mandatory units (this unit is a mandatory unit in the Digital Technician and Application Data Technician pathways), although we encourage you to find ways to engage with employers for other units as well.

Eligible activities and suggestions/ideas that may help you in securing meaningful employer involvement for this unit are given in the table below.

Please refer to the *Qualification Handbook* for further information including a list of activities that are not considered to meet this requirement.

Meaningful employer engagement	Suggestion/ideas for centres when delivering this unit
1. Learners undertake structured work experience or work placements that develop skills and knowledge relevant to the qualification.	
2. Learners undertake project(s), exercises(s) and/or assessments/examination(s) set with input from industry practitioner(s).	Students could research a number of scenarios where enterprise computing could be implemented. Industry practitioners who already work in this area of IT would be able to provide support on the scope of the scenarios.
3. Learners take one or more units delivered or co-delivered by an industry practitioner(s). This could take the form of master classes or guest lectures.	Students could have teaching sessions (specifically for LO1) about the meaning of enterprise computing, how it works and what is required.
4. Industry practitioners operate as 'expert witnesses' and contribute to the assessment of a learner's work or practice, operating within a specified assessment framework. This may be a specific project(s), exercise(s) or examination(s), or all assessments for a qualification.	Students could present their enterprise solutions (for LO4) to industry specialists and receive valuable feedback on their solutions.

You can find further information on employer involvement in the delivery of qualifications in the following documents:

- Employer involvement in the delivery and assessment of vocational qualifications
- DfE work experience guidance

To find out more
ocr.org.uk/IT
or call our Customer Contact Centre on **02476 851509**

Alternatively, you can email us on **vocational.qualifications@ocr.org.uk**

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