OCR
Oxford Cambridge and RSA

Cambridge **TECHNICALS LEVEL 3**

IT

Cambridge TECHNICALS 2016

Unit 23 – Cognitive computing
DELIVERY GUIDE

Version 1

ocr.org.uk/it

CONTENTS

INTRODUCTION

This Delivery Guide has been developed to provide practitioners with a variety of creative and practical ideas to support the delivery of this qualification. The Guide is a collection of lesson ideas with associated activities, which you may find helpful as you plan your lessons.

OCR has collaborated with current practitioners to ensure that the ideas put forward in this Delivery Guide are practical, realistic and dynamic. The Guide is structured by learning outcome so you can see how each activity helps you cover the requirements of this unit.

We appreciate that practitioners are knowledgeable in relation to what works for them and their learners. Therefore, the resources we have produced should not restrict or impact on practitioners' creativity to deliver excellent learning opportunities.

Whether you are an experienced practitioner or new to the sector, we hope you find something in this guide which will help you to deliver excellent learning opportunities.

If you have any feedback on this Delivery Guide or suggestions for other resources you would like OCR to develop, please email resources.feedback@ocr.org.uk.

OPPORTUNITIES FOR ENGLISH AND MATHS SKILLS DEVELOPMENT AND WORK EXPERIENCE

We believe that being able to make good progress in English and maths is essential to learners in both of these contexts and on a range of learning programmes. To help you enable your learners to progress in these subjects, we have signposted opportunities for English and maths skills practice within this resource. We have also identified any potential work experience opportunities within the activities. These suggestions are for guidance only. They are not designed to replace your own subject knowledge and expertise in deciding what is most appropriate for your learners.

English

Maths


Work

Please note

The activities suggested in this Delivery Guide **MUST NOT** be used for assessment purposes. The timings for the suggested activities in this Delivery Guide **DO NOT** relate to the Guided Learning Hours (GLHs) for each unit.

Assessment guidance can be found within the Unit document available from www.ocr.org.uk. The latest version of this Delivery Guide can be downloaded from the OCR website.

UNIT AIM

Cognitive computing and artificial intelligence are where human thought processes and activities are simulated in a computerised model. This unit will provide you with the opportunity to gain a better understanding of cognitive computing and the role it has to play in current technologies and emerging technologies. Using your knowledge and understanding of cognitive computing you will consider how cognitive computing can be used on a global scale in the future and you will develop a business proposal for its use and implementation.

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

Unit 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

To find out more about this qualification please go to: http://www.ocr.org.uk/qualifications/cambridge-technicals-it-level-3-certificate-extended-certificate-introductory-diploma-foundation-diploma-diploma-05838-05842-2016-suite

RELATED ACTIVITIES

The Suggested Activities in this Delivery Guide listed below have also been related to other Cambridge Technicals in IT units/Learning Outcomes (LOs). This could help with delivery planning and enable learners to cover multiple parts of units.

This unit (Unit 23)	Title of suggested activity	Other units/LOs	
LO1	Uses of cognitive computing	Unit 1 Fundamentals of IT	LO3 Understand business IT systems
		Unit 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
		Unit 3 Cyber security	LO1 Understand what is meant by cyber security LO2 Understand the issues surrounding cyber security
		Unit 5 Virtual and augmented reality	LO1 Understand virtual and augmented reality and how they may be used LO4 Be able to predict future application for virtual and augmented reality
		Unit 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 17 Internet of Everything	LO1 Understand what is meant by the IoE
		Unit 22 Big Data analytics	LO1 Understand the scope of Big Data LO2 Be able to process Big Data for business purposes LO3 Be able to provide information resulting from processing Big Data
		Unit 24 Enterprise computing	LO1 Understand the concept of enterprise computing systems LO2 Be able to investigate business requirements for an enterprise computing solution
LO1	Bringing it together	Unit 1 Fundamentals of IT	LO3 Understand business IT systems
		Unit 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
		Unit 5 Virtual and augmented reality	LO1 Understand virtual and augmented reality and how they may be used LO4 Be able to predict future application for virtual and augmented reality
		Unit 16 Developing a Smarter Planet	LO1 Understand what is meant by a Smarter Planet
		Unit 17 Internet of Everything	LO1 What is meant by the IoE
		Unit 22 Big Data analytics	LO1 Understand the scope of Big Data LO2 Be able to process Big Data for business purposes LO3 Be able to provide information resulting from processing Big Data
		Unit 24 Enterprise computing	LO1 Understand the concept of enterprise computing systems LO2 Be able to investigate business requirements for an enterprise computing solution

This unit (Unit 23)	Title of suggested activity	Other units/LOs	
LO1	Drawbacks of cognitive computing	Unit 1 Fundamentals of IT	LO3 Understand business IT systems LO4 Understand ethical and operational issues and threats to computer systems
		Unit 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 principles of information security
		Unit 3 Cyber security	LO1 Understand what is meant by cyber security LO2 Understand the issues surrounding cyber security LO3 Understand measures used to protect against cyber security incidents
		Unit 5 Virtual and augmented reality	LO1 Understand virtual and augmented reality and how they may be used LO4 Be able to predict future applications for virtual and augmented reality
		Unit 16 Developing a Smarter Planet	LO1 Understand what is meant by a Smarter Planet
		Unit 17 Internet of Everything	LO1 Understand what is meant by the IoE
		Unit 22 Big Data analytics	LO1 Understand the scope of Big Data LO2 Be able to process Big Data for business purposes LO3 Be able to provide information resulting from processing Big Data
		Unit 24 Enterprise computing	LO1 Understand the concept of enterprise computing systems LO2 Be able to investigate business requirements for an enterprise computing solution
LO1	Do the benefits outweigh the drawbacks?	Unit 1 Fundamentals of IT	LO3 Understand business IT systems LO4 Understand ethical and operational issues and threats to computer systems
		Unit 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 principles of information security
		Unit 3 Cyber security	LO1 Understand what is meant by cyber security LO2 Understand the issues surrounding cyber security LO3 Understand measures used to protect against cyber security incidents
		Unit 5 Virtual and augmented reality	LO1 Understand virtual and augmented reality and how they may be used LO4 Be able to predict future applications for virtual and augmented reality
		Unit 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 17 Internet of Everything	LO1 Understand what is meant by the Internet of Everything

This unit (Unit 23)	Title of suggested activity	Other units/LOs	
LO2	Investigating business needs	Unit 1 Fundamentals of IT	LO3 Understand business IT systems
		Unit 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
		Unit 3 Cyber security	LO1 Understand what is meant by cyber security LO2 Understand the issues surrounding cyber security LO3 Understand measures used to protect against cyber security incidents
		Unit 5 Virtual and augmented reality	LO1 Understand virtual and augmented reality and how they may be used LO4 Be able to predict future applications for virtual or augmented reality
		Unit 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 17 Internet of Everything	LO1 Understand what is meant by the IoE
		Unit 22 Big Data analytics	LO1 Understand the scope of Big Data LO2 Be able to process Big Data for business purposes LO3 Be able to provide information resulting from processing Big Data
		Unit 24 Enterprise computing	LO1 Understand the concept of enterprise computing systems LO2 Be able to investigate business requirements for an enterprise computing solution
LO2	Opportunities for cognitive computing	Unit 1 Fundamentals of IT	LO3 Understand business IT systems
		Unit 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
		Unit 3 Cyber security	LO1 Understand what is meant by cyber security LO2 Understand the issues surrounding cyber security LO3 Understand measures used to protect against cyber security incidents
		Unit 5 Virtual and augmented reality	LO1 Understand virtual and augmented reality and how they may be used LO4 Be able to predict future applications for virtual or augmented reality
		Unit 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 17 Internet of Everything	LO1 Understand what is meant by the IoE
		Unit 22 Big Data analytics	LO1 Understand the scope of Big Data
		Unit 24 Enterprise computing	LO1 Understand the concept of enterprise computing systems LO2 Be able to investigate business requirements for an enterprise computing solution

This unit (Unit 23)	Title of suggested activity	Other units/LOs	
LO2	Investigating opportunities for positive application of cognitive computing	Unit 1 Fundamentals of IT	LO3 Understand business IT systems
		Unit 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
		Unit 5 Virtual and augmented reality	LO1 Understand virtual and augmented reality and how they may be used LO4 Be able to predict future applications for virtual or augmented reality
		Unit 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 17 Internet of Everything	LO1 Understand what is meant by the IoE
		Unit 22 Big Data analytics	LO1 Understand the scope of Big Data LO2 Be able to process Big Data for business purposes LO3 Be able to provide information resulting from processing Big Data
		Unit 24 Enterprise computing	LO1 Understand the concept of enterprise computing systems LO2 Be able to investigate business requirements for an enterprise computing solution
LO3	Preparing a business proposal	Unit 1 Fundamentals of IT	LO1 Understand computer hardware LO2 Understand computer software LO3 Understand business IT systems LO4 Understand ethical and operational issues and threats to computer systems
		Unit 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
		Unit 3 Cyber security	LO1 Understand what is meant by cyber security LO2 Understand the issues surrounding cyber security LO3 Understand measures used to protect against cyber security incidents
		Unit 5 Virtual and augmented reality	LO1 Understand virtual and augmented reality and how they may be used
		Unit 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 17 Internet of Everything	LO1 Understand what is meant by the IoE
		Unit 22 Big Data analytics	LO1 Understand the scope of Big Data LO2 Be able to process Big Data for business purposes LO3 Be able to provide information resulting from processing Big Data
		Unit 24 Enterprise computing	LO1 Understand the concept of enterprise computing systems LO2 Be able to investigate business requirements for an enterprise computing solution LO3 Be able to develop enterprise computing solutions to meet business requirements

This unit (Unit 23)	Title of suggested activity	Other units/LOs	
LO3	Social, moral and ethical considerations	Unit 1 Fundamentals of IT	LO4 Understand ethical and operational issues and threats to computer systems
		Unit 2 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
		Unit 3 Cyber security	LO1 Understand what is meant by cyber security LO2 Understand the issues surrounding cyber security LO3 Understand measures used to protect against cyber security incidents
LO3	Minimising risks	Unit 1 Fundamentals of IT	LO4 Understand ethical and operational issues and threats to computer systems
		Unit 2 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
		Unit 3 Cyber security	LO1 Understand what is meant by cyber security LO2 Understand the issues surrounding cyber security LO3 Understand measures used to protect against cyber security incidents
LO3	Producing the business proposal	Unit 1 Fundamentals of IT	LO1 Understand computer hardware LO2 Understand computer software LO3 Understand business IT systems LO4 Understand ethical and operational issues and threats to computer systems
		Unit 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
		Unit 3 Cyber security	LO1 Understand what is meant by cyber security LO2 Understand the issues surrounding cyber security LO3 Understand measures used to protect against cyber security incidents
		Unit 5 Virtual and augmented reality	LO1 Understand virtual and augmented reality and how they may be used
		Unit 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 17 Internet of Everything	LO1 Understand what is meant by the IoE
		Unit 22 Big Data analytics	LO1 Understand the scope of Big Data LO2 Be able to process Big Data for business purposes LO3 Be able to provide information resulting from processing Big Data
		Unit 24 Enterprise computing	LO1 Understand the concept of enterprise computing systems LO2 Be able to investigate business requirements for an enterprise computing solution LO3 Be able to develop enterprise computing solutions to meet business requirements LO4 Be able to review the enterprise computing solution with stakeholders

This unit (Unit 23)	Title of suggested activity	Other units/LOs	
LO3	Repurposing	Unit 1 Fundamentals of IT	LO1 Understand computer hardware LO2 Understand computer software LO3 Understand business IT systems
		Unit 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 principles of information security
		Unit 3 Cyber security	LO1 Understand what is meant by cyber security LO2 Understand the issues surrounding cyber security LO3 Understand measures used to protect against cyber security incidents
		Unit 5 Virtual and augmented reality	LO1 Understand virtual and augmented reality and how they may be used LO4 Be able to predict future applications for virtual and augmented reality
		Unit 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 17 Internet of Everything	LO1 Understand what is meant by the Internet of Everything LO2 Be able to repurpose technologies to extend the scope of IoE LO3 Be able to present concept ideas for repurposed developments
		Unit 22 Big Data analytics	LO1 Understand the scope of Big Data LO2 Be able to process Big Data for business purposes LO3 Be able to provide information resulting from processing Big Data
		Unit 24 Enterprise computing	LO1 Understand the concept of enterprise computing systems LO2 Be able to investigate business requirements for an enterprise computing solution LO3 Be able to develop enterprise computing solutions to meet business requirements LO4 Be able to review the enterprise computing solution with stakeholders

This unit (Unit 23)	Title of suggested activity	Other units/LOs	
LO3	Can we repurpose?	Unit 1 Fundamentals of IT	LO1 Understand computer hardware LO2 Understand computer software LO3 Understand business IT systems
		Unit 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 principles of information security
		Unit 3 Cyber security	LO1 Understand what is meant by cyber security LO2 Understand the issues surrounding cyber security LO3 Understand measures used to protect against cyber security incidents
		Unit 5 Virtual and augmented reality	LO1 Understand virtual and augmented reality and how they may be used LO4 Be able to predict future applications for virtual and augmented reality
		Unit 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 17 Internet of Everything	LO1 Understand what is meant by the Internet of Everything LO2 Be able to repurpose technologies to extend the scope of IoE LO3 Be able to present concept ideas for repurposed developments
		Unit 22 Big Data analytics	LO1 Understand the scope of Big Data LO2 Be able to process Big Data for business purposes LO3 Be able to provide information resulting from processing Big Data
		Unit 24 Enterprise computing	LO1 Understand the concept of enterprise computing systems LO2 Be able to investigate business requirements for an enterprise computing solution LO3 Be able to develop enterprise computing solutions to meet business requirements LO4 Be able to review the enterprise computing solution with stakeholders

KEY TERMS

Explanations of the key terms used within this unit, in the context of this unit	
Key term	**Explanation**
Cognitive computing	Describes technology platforms that are broadly based on the scientific disciplines of artificial intelligence (AI), which is the simulation of human thought processes in a computerised model. These systems learn and naturally interact with humans to extend what machines can do on their own e.g. data analytics from major healthcare research.
Ethical considerations	This is taking into consideration how the action(s) taken by a person/persons or machinery can impact on another person or persons e.g. if it is the intention that a machine will carry out the role of a human, what is the impact that this could have on the human.
Ethics	Rules of conduct governed by professional and legal guidelines within a particular time and place.
Minimising risks	In the context of this unit, minimising risks is how potentially negative social, moral and ethical implications of using cognitive computing can be minimised. An example would be ensuring that medical data (relating to patients) was protected and did not fall into the wrong hands.
Moral considerations	This is taking into consideration whether it would be morally acceptable to carry out an action. An example of this is GM (genetically modified) crops. Some people believe in them and find them morally acceptable; those against them say that it is not morally acceptable to interfere with nature.
Morals	Principles or habits in relation to right and wrong conduct.
Repurposing	Changing something so that it can be used for a different purpose than it was originally designed for e.g. finding ways to repurpose old computer equipment.
Social considerations	How something would impact on society e.g. implementing automated technology would make people redundant, but on the other hand new technology can actually create new jobs.

MISCONCEPTIONS

Some common misconceptions and guidance on how they could be overcome		
What is the misconception?	**How can this be overcome?**	**Resources which could help**
That cognitive computing is just another name for artificial intelligence	Learners need to understand that cognitive computing is an aspect of artificial intelligence. They could be provided with the following statement: An artificial intelligence system will analyse information and inform you on what course of action to take. A cognitive computing system will analyse information and provide you with information in order for you to make a decision, allowing for the occasions when human experience and judgment become important.	Organisation: VDC Research Resource Title: IoT and Embedded Technology Blog: IBM's Watson Answers the Question, "What's the Difference Between Artificial Intelligence and Cognitive Computing?" Web Link: http://www.vdcresearch.com/News-events/iot-blog/IBM-Watson-Answers-Question-Artificial-Intelligence.html Description: Provides a very good overview of the difference between AI and cognitive computing with reference to Watson Analyst Day held by IBM.
Cognitive computing systems are programmed	Learners need to understand that cognitive computing systems are not programmed but that they are trained to sense, predict, infer and in some instances 'think' using artificial intelligence and machine learning algorithms that use vast amounts of data. They act like humans in that they learn over time based on experience.	Organisation: TechTarget Resource Title: Cognitive computing Web Link: http://whatis.techtarget.com/definition/cognitive-computing Description: Provides a short summary explanation of cognitive computing.

SUGGESTED ACTIVITIES

LO No:	1		
LO Title:	**Know how cognitive computing is used in business**		
Title of suggested activity	**Suggested activities**	**Suggested timings**	**Also related to**
What is cognitive computing?	Learners could research via the internet the term 'cognitive computing' and make notes on the results. A group discussion on their findings could then take place, so that learners could then explain what is meant by the term 'cognitive computing'. The following link may be useful for learners to read to support their learning throughout Learning Outcome 1: Organisation: Accenture Resource Title: Turning Cognitive Computing into Business Value. Today. Web Link: https://www.accenture.com/t20150521T005731__w__/us-en/_acnmedia/Accenture/Conversion-Assets/DotCom/Documents/Global/PDF/Dualpub_8/Accenture-Turning-Cognitive-Computing-Business-Value-Today.pdf	1 hour	
Uses of cognitive computing	Tutors could provide the learners with a list of sectors e.g. health care, retail, education, and encourage learners to think of how cognitive computing has been used in each of the sectors. In some instances, they will be able to identify the uses of cognitive computing from their research for the What is cognitive computing? activity above.	1.5 hours	Unit 1 LO3 Unit 2 LO1, LO2, LO3, LO4 Unit 3 LO1, LO2 Unit 5 LO1, LO4 Unit 16 LO1, LO2, LO3 Unit 17 LO1 Unit 22 LO1, LO2, LO3 Unit 24 LO1, LO2
Business stakeholder interest	Learners need to know the different types of business stakeholders who have benefitted or would benefit from using cognitive computing. Learners could work in small groups to research the different types of business stakeholders e.g. individuals, corporate, small and medium-sized enterprises, public, private, third party. It is important that learners understand the differences between types of stakeholders and are able to identify examples of businesses that would be associated with each. The following website may provide learners with a useful starting place for their research: Organisation: Boundless.com Resource Title: Types of Stakeholders Web Link: https://www.boundless.com/users/14854/textbooks/organizational-communications/introduction-to-organizational-communications-1/introduction-to-organizational-communications-2/types-of-stakeholders-12-13355/	1.5 hours	

Title of suggested activity	Suggested activities	Suggested timings	Also related to
Bringing it together	It is always useful for learners to be able to put things into context especially when learning about a subject such as cognitive computing. Learners could each be given a sector (or more than one sector if the size of the group is small) and asked to create an information guide which provides the following information: • a description of the term 'cognitive computing' • for each of the sectors they have been given they need to: – describe a business from the sector which has used cognitive computing – describe the type of business stakeholder(s) involved – explain how cognitive computing has been used by the business.	2.5 hours	Unit 1 LO3 Unit 2 LO1, LO2, LO3 Unit 5 LO1, LO4 Unit 16 LO1 Unit 17 LO1 Unit 22 LO1, LO2, LO3 Unit 24 LO1, LO2
Drawbacks of cognitive computing	Provide learners with an overview of the different potential drawbacks of the use of cognitive computing applications. These could include: • safeguarding of data • employment security • transformation of how we live, work and think. In small groups the learners could prepare a presentation where they provide specific examples of the drawbacks identified above e.g. cognitive computing can provide information which will support a doctor or consultant to make a decision in relation to a person's medical care but it cannot replace the experience and expertise of the doctor or consultant. The following websites may be useful to learners: Organisation: The Digital Post Resource Title: Cognitive Computing: Benefits and Challenges of the Next Tech Revolution Web Link: http://www.thedigitalpost.eu/2015/channel-data-economy/cognitive-computing-benefits-and-challenges-of-the-next-tech-revolution-3 Description: This is an interesting article on the challenges of cognitive computing. Organisation: TechBeacon Resource Title: Cognitive computing gets real, promising better security Web Link: http://techbeacon.com/cognitive-computing-gets-real-promising-better-security Description: Provides an insight into the importance of security and confidence in that security when using cognitive computing.	1 hour	Unit 1 LO3, LO4 Unit 2 LO1, LO2, LO3, LO4, LO5 Unit 3 LO1, LO2, LO3 Unit 5 LO1, LO4 Unit 16 LO1 Unit 17 LO1 Unit 22 LO1, LO2, LO3 Unit 24 LO1, LO2

Title of suggested activity	Suggested activities	Suggested timings	Also related to
Do the benefits outweigh the drawbacks?	It is important that learners can consider the benefits as well as the drawbacks of using cognitive computing applications. Learners could work in small groups (or as a whole group) to identify the benefits of using cognitive computing applications for each of the uses that they referred to within the activities above. Learners could then produce individual comparison tables where they compare the benefits against the drawbacks.	1.5 hours	Unit 1 LO3, LO4 Unit 2 LO1, LO2, LO3, LO4, LO5 Unit 3 LO1, LO2, LO3 Unit 5 LO1, LO4 Unit 16 LO1, LO2, LO3 Unit 17 LO1

SUGGESTED ACTIVITIES

LO No:	2		
LO Title:	**Be able to investigate opportunities for the positive application of cognitive computing**		
Title of suggested activity	**Suggested activities**	**Suggested timings**	**Also related to**
Investigating business needs	Tutors could facilitate a group discussion on how to investigate opportunities for businesses to apply cognitive computing to their operations. The discussion could cover: • purpose (what the business wants to achieve) • how the purpose will be achieved • how cognitive computing would be used to help. Learners could then discuss how an investigation could be carried out; for example: • questioning the stakeholders • reviewing current systems.	1 hour	Unit 1 LO3 Unit 2 LO1, LO2, LO3 Unit 3 LO1, LO2, LO3 Unit 5 LO1, LO4 Unit 16 LO1, LO2, LO3 Unit 17 LO1 Unit 22 LO1, LO2, LO3 Unit 24 LO1, LO2
Opportunities for cognitive computing	Tutors could provide learners with a scenario for them to investigate. For example, a travel company wants to analyse research intelligence on popular holiday destinations, holiday types and travel methods over the last 5 years. It wants to ensure that it is offering holidays which are popular within the travel market and identify opportunities to expand its product and service offer. Learners could work in small groups to describe how cognitive computing could be used to help achieve the analysis required by the travel company. Useful resource link: www.dcsplus.net/blog/how-cognitive-computing-could-change-how-we-travel	1.5 hours	Unit 1 LO3 Unit 2 LO1, LO2, LO3 Unit 3 LO1, LO2, LO3 Unit 5 LO1, LO4 Unit 16 LO1, LO2, LO3 Unit 17 LO1 Unit 22 LO1 Unit 24 LO1, LO2
Investigating opportunities for positive application of cognitive computing	Tutors could use the following website for learners to gain information on the potential application of LifeLearn's Sofie in veterinary practices. Learners could watch the video on how IBM's Watson works. This could form the basis of a class discussion on how similar ideas could be implemented in other sectors e.g. healthcare: http://www.lifelearn.com/innovations/lifelearn-sofie/	1.5 hours	Unit 1 LO3 Unit 2 LO1, LO2, LO3 Unit 5 LO1, LO4 Unit 16 LO1, LO2, LO3 Unit 17 LO1 Unit 22 LO1, LO2, LO3 Unit 24 LO1, LO2

SUGGESTED ACTIVITIES

LO No:	3		
LO Title:	**Be able to generate business proposals for an identified application of cognitive computing**		
Title of suggested activity	**Suggested activities**	**Suggested timings**	**Also related to**
Preparing a business proposal	Tutors could ensure that learners understand what a business proposal is. A business proposal is a written offer from one business (the seller) to another (the buyer). They further need to understand that a good business proposal is also a good marketing tool and will therefore enable a business to sell its products and/or services. Tutors could facilitate a group discussion on what could be included in a business proposal using the Teaching Content within the Unit Specification: http://www.ocr.org.uk/Images/324200-unit-23-cognitive-computing.pdf Learners could discuss what each of the items listed represents and its importance for inclusion within the business proposal. In addition, learners could research information from the following websites to gather further guidance on the importance of being able to prepare a good business proposal: Organisation: Sue Clayton Resource Title: 7 Steps To A Winning Business Proposal Web Link: https://www.entrepreneur.com/article/21834 Description: An article about writing successful business proposals. Organisation: Bidsketch Resource Title: How to Write a Business Proposal Web Link: https://blog.bidsketch.com/articles/how-to-write-a-business-proposal/ Description: An article with guidance on writing business proposals. Organisation: WikiHow Resource Title: How to Write a Business Proposal Web Link: http://www.wikihow.com/Write-a-Business-Proposal Description: An article that provides guidance on how to write a business proposal and includes some sample templates.	2 hours	Unit 1 LO1, LO2, LO3, LO4 Unit 2 LO1, LO2, LO3, LO4 Unit 3 LO1, LO2, LO3 Unit 5 LO1 Unit 16 LO1, LO2, LO3 Unit 17 LO1 Unit 22 LO1, LO2, LO3 Unit 24 LO1, LO2, LO3

Title of suggested activity	Suggested activities	Suggested timings	Also related to
Social, moral and ethical considerations	Tutors could ask the learners to research the definitions for social, moral and ethical and how they are different from each other. Learners could then work in small groups to produce some examples of considerations that need to be taken into account for current uses of cognitive computing by businesses.	1.5 hours	Unit 1 LO4 Unit 2 LO3, LO4 Unit 3 LO1, LO2, LO3
Minimising risks	For each of the considerations identified in the activity above, learners could be asked to identify the implication (risk) and how it could be minimised.	1 hour	Unit 1 LO4 Unit 2 LO3, LO4 Unit 3 LO1, LO2, LO3
Producing the business proposal	Learners could prepare a business proposal based on the travel company scenario in the Opportunities for cognitive computing activity in Learning Outcome 2. They could include as many of the points identified in the Teaching Content as possible (although cost may be difficult to address). They could state what moral, social and ethical implications need to be considered and justify their reasoning. Where a risk is identified within these considerations, learners could suggest how that risk could be minimised.	2.5 hours	Unit 1 LO1, LO2, LO3, LO4 Unit 2 LO1, LO2, LO3, LO4 Unit 3 LO1, LO2, LO3 Unit 5 LO1 Unit 16 LO1, LO2, LO3 Unit 17 LO1 Unit 22 LO1, LO2, LO3 Unit 24 LO1, LO2, LO3, LO4
Repurposing	Tutors could facilitate a group discussion on what is meant by the term 'repurposing' and provide examples of where repurposing has taken place. It is important that the focus is primarily on technology, including both hardware and software.	1 hour	Unit 1 LO1, LO2, LO3 Unit 2 LO1, LO2, LO3, LO4, LO5 Unit 3 LO1, LO2, LO3 Unit 5 LO1, LO4 Unit 16 LO1, LO2, LO3 Unit 17 LO1, LO2, LO3 Unit 22 LO1, LO2, LO3 Unit 24 LO1, LO2, LO3, LO4
Can we repurpose?	Learners could work in groups to prepare a presentation that explains how the Sofie cognitive computing application, used by veterinary practices, could be repurposed for use by other businesses and, where possible, used in different sectors e.g. education, retail or healthcare.	2 hours	Unit 1 LO1, LO2, LO3 Unit 2 LO1, LO2, LO3, LO4, LO5 Unit 3 LO1, LO2, LO3 Unit 5 LO1, LO4 Unit 16 LO1, LO2, LO3 Unit 17 LO1, LO2, LO3 Unit 22 LO1, LO2, LO3 Unit 24 LO1, LO2, LO3, LO4

The small print


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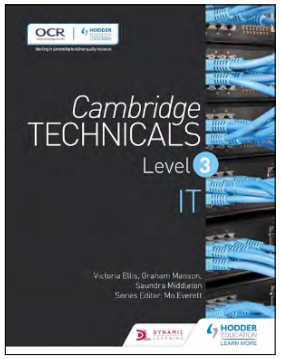

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