OCR
Oxford Cambridge and RSA

Cambridge **TECHNICALS LEVEL 3**

IT

Unit 6 – Application design
DELIVERY GUIDE

Version 2

Cambridge TECHNICALS 2016

ocr.org.uk/it

CONTENTS

The activities within this teaching and learning resource must not be used for summative assessment purposes. As part of our teaching we expect support to be given to your learners; such support is not permissible for summative assessment and is likely to be considered malpractice.

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 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

The world is increasingly reliant on applications that help individuals, businesses and organisations achieve specific activities or purposes. In this unit you will explore potential ideas for a new application and develop the fundamental design for it. You will then develop the designs for an application and how users will interact with it. The application that you design can be for any sector and for any purpose. You will have the opportunity to present your ideas, prototype them, and gain feedback before refining your design.

Besides the technical knowledge that you will gain about designing an application, you will also learn key transferable skills such as liaising with clients, questioning people effectively to gain the information you need to develop successful designs, and presenting your ideas to an audience and getting feedback from them.

This unit is mandatory to the application developer specialist pathway in the Level 3 Diploma suite of qualifications as it supports the development of skills, knowledge and understanding appropriate to a wide range of job roles requiring the development of applications in mobile technology, business software, graphics, game and web design.

Unit 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

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

Cambridge TECHNICALS 2016

2016 Suite

- **New suite for first teaching September 2016**
- **Externally assessed content**
- **Eligible for Key Stage 5 performance points from 2018**
- **Designed to meet the DfE technical guidance**

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 6)	Title of suggested activity	Other units/LOs	
LO1	Understanding the requirements of the development life cycle	Unit 2 Global information	LO5 Understand the process flow of information LO6 Understand the principles of information security
		Unit 3 Cyber security	LO1 Understand what is meant by cyber security
		Unit 8 Project management	LO1 Understand the project life cycle
		Unit 9 Product development	LO1 Understand the product development life cycle
		Unit 11 Systems analysis and design	LO1 Understand the role of systems analysis and design in relation to the systems development lifecycle
LO2	What to consider when using interviews to gather information	Unit 1 Fundamentals of IT	LO1 Understand computer hardware LO2 Understand computer software LO4 Understand employability and communication skills used in an IT environment
		Unit 5 Virtual and augmented reality	LO2 Be able to design virtual and augmented reality resources LO3 Be able to create a virtual or augmented reality resource
		Unit 7 Data analysis and design	LO1 Understand the purpose and stages of data analysis and design
		Unit 11 Systems analysis and design	LO2 Be able to use investigative techniques to establish requirements for business systems
LO3	Exploring functional requirements of applications	Unit 2 Global information	LO4 Understand the legal and regulatory frameworks governing the storage and use of global information
		Unit 9 Product development	LO2 Be able to design products that meet identified client requirements
		Unit 11 Systems analysis and design	LO1 Understand the role of systems analysis and design in relation to the systems development lifecycle
LO4	How to pitch ideas to an audience	Unit 7 Data analysis and design	LO4 Be able to present data analysis and design solutions to stakeholders
		Unit 10 Business computing	LO4 Be able to present data analysis outcomes

KEY TERMS

Explanations of the key terms used within this unit, in the context of this unit	
Key term	**Explanation**
Application	A computer program that is created for a particular purpose. For example, a banking APP on a mobile phone, a multi-platform website designed for a business organisation, a homework APP on a tablet computer etc.
Application development	The processes involved in creating an application that is fit for purpose. This could involve defined stages of conception of ideas to completion i.e. the system life cycle.
Application development model	The distinct systems of developing applications. Known application development models include waterfall, iterative, agile, spiral etc.
Data flow	The pathways through which data received by an application is passed on from one location to another. This involves input, process, storage and output.
Data flow diagrams	The use of symbols to represent the channels through which data flows through an application to identify input, process, output and storage of different types of data.
Functional requirement	This defines the usability features and all other procedural elements which are required to operate and use the application. For example the functional requirement on a web page could be to display information in a variety of formats: video, graphics, text, sound etc.
Feasibility studies	The method of analysing a proposed application design to determine how possible and practical it is to be realised. The feasibility study will help the client understand whether to proceed with the application after considering the cost, time and benefits of the proposal.
Funnelling	A top to bottom approach used when developing a new application. An alternative approach to the system life cycle.
Pitch	The structure and delivery of the design and features of an application to an audience which may comprise the proposed client or customers. The pitch should also inform the audience how the application would work in practice and the business opportunities that it could possibly bring.
Prototype	The production of an initial design of an application prior to producing it in commercial quantities.
Standardisation	The design of an application to ensure it meets an agreed set of rules to ensure all applications of similar type maintain a level of universal appeal and compliance. These rules are set out by national and international organisations that work together to set new rules and update existing ones which may or may not be legally binding.
User	The end user of an application e.g. the visitors to a website, the office workers who use a company's Management Information System, the customers who order their groceries via a mobile phone APP etc.
User requirements	The features and characteristics that make up the design of the application which would enable the end user to use and operate it. For example the external features i.e. buttons, menus, touch screen etc and external outputs via screen, LCD, monitor etc.

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**
The difference between application and software	Learners may confuse the meanings of application and software. Learners could differentiate the two by researching the meanings of application and software separately. This could help learners to understand the context in which they can use each term.	Organisation: DifferenceBetween.net Resource Title: Difference Between Software and Application Web Link: http://www.differencebetween.net/technology/difference-between-software-and-application/
How the use of closed and open questions could be used for data analysis	Learners may not understand the implications of using closed and open questions when gathering data using interviews and questionnaires. Tutors could ask learners questions where they have to provide an answer from a choice. Tutors could also ask another question where learners provide an explanation or opinion. Tutors could then use the data to quantify the responses from the first question and use this to explain quantitative data. Tutors could get learners to identify any trends from the responses from the second question to highlight qualitative data.	Organisation: Snap Surveys Resource Title: Choosing Between Open or Closed Questions for Course Evaluations Web Link: http://www.snapsurveys.com/blog/choosing-open-closed-questions-evaluations/ Organisation: Snap Surveys Resource Title: Advantages and Disadvantages of Closed Questions in Course Evaluations Web Link: http://www.snapsurveys.com/blog/advantages-disadvantages-closed-questions-course-eval/
Understanding the purpose of standardisation of design	Learners may not fully understand why applications are designed to a standard. W3C is an international organisation that works to develop a range of processes and practices which applications need to conform to. Tutors could direct learners to the W3C website to research more about what these standards comprise of and how they are developed.	Organisation: W3C Resource Title: Web design and applications Web Link: https://www.w3.org/standards/webdesign/

Some common misconceptions and guidance on how they could be overcome		
What is the misconception?	**How can this be overcome?**	**Resources which could help**
Understanding the meaning of feasibility study	Learners may not have an in-depth understanding of carrying out feasibility studies. Tutors could direct learners to the Ambysoft IT consultancy website which provides useful information about the different stages involved in carrying out a feasibility study in order to justify the viability of an application project. Learners could gain more knowledge about the different stages that are involved in a feasibility study such as: • technological requirements • economic or financial cost requirements • legal issues • operational requirements.	Organisation: Ambysoft Resource Title: Justifying a Software Development Project Web Link: http://www.ambysoft.com/essays/projectJustification.html
What are the differences between sketches and prototypes?	It is important for learners to be able to distinguish between sketches and prototypes. Sketches are used in the early stages of application design to explore and initiate the intended ideas. Prototypes on the other hand are used at the later stages of application design to create a model that was initiated during the conceptual stage of the design.	Organisation: Usability Resource Title: Prototyping Web Link: http://www.usability.gov/how-to-and-tools/methods/prototyping.html
What are the differences between functional and non-functional requirements?	When analysing the functional requirements of an application, it is important for learners to contrast these with the non-functional requirements in order not to confuse the two when analysing user requirements.	Organisation: NFP Open Requirements Project Resource Title: Functional Requirements Web Link: http://www.nfprequirements.org/requirements/functional-requirements Organisation: NFP Open Requirements Project Resource Title: Non-Functional Requirements Web Link: http://www.nfprequirements.org/requirements/non-functional-requirements

SUGGESTED ACTIVITIES

LO No:	1		
LO Title:	**Understand how applications are designed**		
Title of suggested activity	**Suggested activities**	**Suggested timings**	**Also related to**
Understanding the requirements of the development life cycle	Tutors could introduce the topic of the system life cycle in the development of business applications. Tutors could explain what happens during each stage using an example of a business application to provide some context e.g. a new mobile APP, a new car, a new smartphone etc. The Teach-ICT website has a section which covers this topic in great depth. Organisation: Teach-ICT.com Resource Title: The System Life Cycle (SLC) Website Link: http://www.teach-ict.com/as_a2_ict_new/ocr/A2_G063/331_systems_cycle/slc_stages/miniweb/pg4.htm	1 hour	Unit 2 LO5, LO6 Unit 3 LO1 Unit 8 LO1 Unit 9 LO1 Unit 11 LO1
How to apply the development life cycle	Tutors could provide a case study of how the development life cycle is applied on a real-life application. This could provide learners with practical understanding of how it is used in the development of applications. Learners could be directed to Mark McMurtrey's article, given in the link below. Working in groups, they could investigate how each stage of the development life cycle has been applied in the case study, taking notes of their observations and making any inferences they may come across as a result. Each group could outline their findings and present to the whole group using a PowerPoint presentation. Organisation: McMurtrey, M Resource Title: A Case Study of the Application of the Systems Development Life Cycle (SDLC) in 21st Century Health Care: Something Old, Something New? Website Link: http://quod.lib.umich.edu/j/jsais/11880084.0001.103/--case-study-of-the-application-of-the-systems-development?rgn=main;view=fulltext	2 hours	

Title of suggested activity	Suggested activities	Suggested timings	Also related to
Researching different application development models	After learners have grasped the meaning and application of the systems development life cycle, it is important for them to gain an understanding of the different approaches that are available and which model is the most appropriate for each different application design. Tutors could ask learners to research any three models from the list in the teaching content and compare them to identify their advantages and disadvantages. A useful web resource for the topic of development models: Organisation: ISTQB Resource Title: What are the Software Development Models? Website Link http://istqbexamcertification.com/what-are-the-software-development-models/	1 hour	
What to consider when choosing a development method	Knowing the characteristics and features of a range of development models is equally as important for learners to be able to choose a model that would be best suited for their application design. Tutors could ask learners to discuss in small groups and decide what approach to take for their application design in the How to apply the development life cycle activity. Learners could be presented with a choice of a rigid/rigorous approach where one stage must be thoroughly completed before moving on to the next, or a flexible approach where user requirements are tested at every phase of the development cycle. Learners in groups could discuss how they would apply their chosen development model to an application design. Each group could update their PowerPoint presentation from the How to apply the development life cycle activity, which they can use to present their ideas to the whole group. A useful web resource for the topic of development models: Organisation: ISTQB Resource Title: What are the Software Development Models? Website Link: http://istqbexamcertification.com/what-are-the-software-development-models/	2 hours	

Title of suggested activity	Suggested activities	Suggested timings	Also related to
Making comparisons between alternative development methods	It would benefit learners to contrast two different development models in order to compare their advantages or disadvantages. Learners could build on from the work they completed in the previous activity but this time they could discuss in small groups and choose an alternative model. If in the How to apply the development life cycle activity, they applied a model which has a rigid/rigorous approach, they could choose a model which is flexible in its approach, or vice versa. Learners in groups could discuss how they would apply their chosen development model to an application design. Each group could update their PowerPoint presentation from the What to consider when choosing a development method activity, which they can then use to present their ideas to the whole group. A useful web resource for the topic of development models: Organisation: ISTQB Resource Title: What are the Software Development Models? Website Link: http://istqbexamcertification.com/what-are-the-software-development-models/	2 hours	
How to critically distinguish between alternative development models	Learners at this point should already be familiar with two contrasting development models but could identify any advantages or disadvantages they encountered whilst using the development model in the What to consider when choosing a development method activity. Learners could also identify any advantages or disadvantages they encountered whilst using the alternative development model in the activity immediately above. Learners could consider the key differences between the two alternative models and use this as a benchmark when deciding what approach would be best suited when developing a new application design.	1 hour	

SUGGESTED ACTIVITIES

LO No:	2		
LO Title:	**Be able to investigate potential solutions for application developments**		
Title of suggested activity	**Suggested activities**	**Suggested timings**	**Also related to**
What to consider when using interviews to gather information	Tutors could begin by introducing learners to the definitions and meanings of qualitative and quantitative data before considering client and user interviews. A good starting point for tutors to support learners could be investigating the meanings of these concepts using the website link: http://www.snapsurveys.com/blog/what-is-the-difference-between-qualitative-research-and-quantitative-research/ Learners could be directed to study closed and open questions with examples including advantages and disadvantages of each type. A useful web resource with examples of open and closed questions can be found here: http://www.w3computing.com/systemsanalysis/open-ended-closed-interview-questions/ Tutors could then support learners to consider methods of structuring interview questions including potential pitfalls that they may encounter when carrying out this activity. The W3Computing web resource provides useful information for learners to carry out additional studies:  Organisation: W3Computing Resource Title: Arranging Interview Questions in a Logical Sequence Website Link: http://www.w3computing.com/systemsanalysis/arranging-interview-questions-logical-sequence/	2 hours	Unit 1 LO1, LO2, LO4 Unit 5 LO2, LO3 Unit 7 LO1 Unit 11 LO2

Title of suggested activity	Suggested activities	Suggested timings	Also related to
How to observe tasks carried out by users	In addition to understanding ways of interviewing users, it is also important for learners to understand the best methodology to use when observing users carrying out tasks when using applications. Tutors could ask learners to work in small groups to observe users using website applications to gain a better understanding of their usability. Learners could observe each other using a website in order to find out the ease of use. The website resource by the Nielsen Norman Group provides information about the most appropriate method to observe and test the usability of website applications. Learners could outline a number of questions from their observations. These could be analysed and the outcomes compared and discussed to see if there were any common themes. https://www.nngroup.com/articles/first-rule-of-usability-dont-listen-to-users/	1 hour	
The different ways of analysing information	It is important for learners to understand the meaning of qualitative and quantitative methods when gathering and analysing information to determine the usability of applications. Tutors could then direct learners to carry out further reading on the concepts of qualitative and quantitative information and their use in analysing usability of applications. Organisation: Nielsen Norman Group Resource Title: Quantitative Studies: How Many Users to Test? Website Link: https://www.nngroup.com/articles/quantitative-studies-how-many-users/	1 hour	
What are the functional requirements for application design?	Tutors could ask learners to research the functional and non-functional requirements for any systems project and how they underpin the success or failure of an application design project. Learners could be asked to work in small groups to create a video that explains the functional and non-functional user requirements that they have researched. Coley Consulting on its website includes a useful resource to explain functional and non-functional requirements: Organisation: Coley Consulting Resource Title: User Requirements Website Link: http://www.coleyconsulting.co.uk/require.htm	1 hour	

Title of suggested activity	Suggested activities	Suggested timings	Also related to
Identifying limitations encountered when developing an application	Learners will need to understand that designing new applications or even upgrading existing ones may not always provide all the solutions that were initially intended. Tutors could revisit the Understanding the requirements of the development life cycle activity in Learning Outcome 1 and discuss what happens in the analysis stage. The discussion should provide learners with information about what the system can and cannot do. Tutors could briefly introduce learners to feasibility studies that could reveal any potential issues that may be encountered.	1 hour	
Understand how to write a feasibility study	Tutors could introduce the role of feasibility studies in designing applications for users. Tutors could direct learners to a useful website resource on the subject which learners may use to understand the structure and presentation of a feasibility study. The resource can be found here: http://www.sqa.org.uk/e-learning/SDM02CD/page_12.htm Learners could be given a series of scenarios and, in small groups, discuss and write a feasibility study for each scenario. Example scenarios could include the following: Scenario 1 – You have been asked by your tutor to write a feasibility report for a mobile version of your centre's website to be developed to make it easier for it to be accessed using mobile devices. The client has not given you a budget but wants you to include the cost of the project in your report. You have four months to complete the project. Scenario 2 – The head of your centre has asked you to write a feasibility report for a mobile phone app that will allow tutors to post homework online for learners to access. The app should have a page for each subject area. The centre has limited finances and has a budget of £2000 and has given you three months to complete the project. Scenario 3 – Your local TV station has asked you to write a feasibility study for an animated 45-second television advert which will promote tourism in the city/town you live in. The TV station has a substantial budget for this ad campaign. You will be expected to complete the project in two months.	2 hours	

SUGGESTED ACTIVITIES

LO No:	3		
LO Title:	**Be able to generate designs for application solutions**		
Title of suggested activity	**Suggested activities**	**Suggested timings**	**Also related to**
Exploring functional requirements of applications	Tutors will need to ensure learners understand the meaning of functional and non-functional requirements using real-life examples. The examples must be described in the context of what the application solution must do or the steps it is going to take to perform that action. A useful web resource that fully explains functional/non-functional requirements with examples: Organisation: Stack Overflow Resource Title: What is functional and non functional requirement Website Link: http://stackoverflow.com/questions/16475979/what-is-functional-and-non-functional-requirement	1 hour	Unit 2 LO4 Unit 9 LO2 Unit 11 LO1
How to model functional requirements	Learners need to understand the different models (diagrams) that could be used to model the features and behaviours of functional requirements. Learners could research the different models that are available including use case diagrams, interaction diagrams, statechart diagrams and activity diagrams. Useful web resources that fully explain a range of diagrams that could be used to model functional requirements: Organisation: tutorialspoint Resource Title: Use Case Diagrams Website Link: http://www.tutorialspoint.com/uml/uml_use_case_diagram.htm Organisation: tutorialspoint Resource Title: Interaction Diagrams Website Link: http://www.tutorialspoint.com/uml/uml_interaction_diagram.htm Organisation: tutorialspoint Resource Title: Statechart Diagrams Website Link: http://www.tutorialspoint.com/uml/uml_statechart_diagram.htm Organisation: tutorialspoint Resource Title: Activity Diagrams Website Link: http://www.tutorialspoint.com/uml/uml_activity_diagram.htm	2 hours	

Title of suggested activity	Suggested activities	Suggested timings	Also related to
How to model functional requirements (continued)	A useful web resource that introduces data flow diagrams: Organisation: Teach-ICT Resource Title: DFDs Website Link: http://www.teach-ict.com/as_a2_ict_new/ocr/A2_G063/331_systems_cycle/analysis_tools/miniweb/pg10.htm A useful web resource that introduces entity relationship diagrams: Organisation: Teach-ICT Resource Title: Entity Relationship Diagrams (ERD) Website Link: http://www.teach-ict.com/as_a2_ict_new/ocr/A2_G063/331_systems_cycle/analysis_tools/miniweb/pg3.htm A useful web resource that introduces wireframe diagrams: Organisation: BBC Bitesize Resource Title: Wire framing Website Link: http://www.bbc.co.uk/education/guides/z3yc9j6/revision A useful web resource that compares mockups and wireframes: Organisation: Designmodod.com Resource Title: Wireframing, Prototyping, Mockuping – What's the Difference? Website Link: http://designmodo.com/wireframing-prototyping-mockuping/miniweb/pg10.htm		
Information flow in application design	Tutors could introduce the topic of data and information flow by exploring with the learners an employer's systems application design. It is expected learners should develop an understanding of the diagram notations and their uses for flowcharts and data flow diagrams. The tutor could describe how the organisation's application system works using data flow diagrams (DFDs) to illustrate the input and output of information. Learners could use the free versions of software such as SmartDraw, Visio Paradigm, or alternatively using the draw tools in Microsoft Word or Publisher, to easily create DFDs with industry recognised symbols for the learner to be familiar with. This video may help learners with the knowledge and steps to set up DFDs in Word. https://www.youtube.com/watch?v=nVBIMRI_UD8	2 hours	

Title of suggested activity	Suggested activities	Suggested timings	Also related to
Getting to know the different applications standards	Learners need to understand the meaning of standards when designing applications. They also need to be aware of the range of standards that apply to application designs. The Digital Curation Centre is an organisation, based at the University of Edinburgh, which works alongside universities and has a link on its website showing a collection of all standards that apply to application designs. Tutors could direct learners to this useful web resource to research the various standards that apply to applications. Organisation: Digital Curation Centre Resource Title: All Standards for Any Lifecycle Action Website Link: http://www.dcc.ac.uk/resources/standards/diffuse/standards?framework_id=0&lifecycle_id=0&sort=type Learners could extend their research into standards for application design by looking specifically at standards for web applications. The World Wide Web Consortium (W3C) is an international organisation which works to put together standards for web applications. Its website provides a wealth of information about the range of standards that apply to web applications, who by and how they are developed. Organisation: The World Wide Web Consortium (W3C) Resource Title: Standards Website Link: https://www.w3.org/standards/	2 hours	
Choices for design applications	Tutors could introduce learners to the different design choices to consider when designing applications that could be accessed on the Internet. A section on the Microsoft website provides a starting point for learners to compare a number of issues they could research to inform the choices they are likely to make for design applications. Organisation: Microsoft Resource Title: Application Design Choices Website Link: https://msdn.microsoft.com/en-us/library/dx53y1ez.aspx#_core_client_or_server_application	2 hours	

Title of suggested activity	Suggested activities	Suggested timings	Also related to
Understanding the makeup of Information systems	Learners need to understand that new or existing applications process and store information which impact positively or negatively on the end users, the client and even the wider economy. For this reason, learners could investigate the wider application of information systems including the components and impact of their use. The Encyclopaedia Britannica has a section on its website which provides detailed information which learners may find useful in order to begin to reflect and identify potential advantages and disadvantages when proposing a new application design solution. Organisation: Encyclopaedia Britannica Resource Title: Information system Website Link: http://www.britannica.com/topic/information-system Learners could follow up their research into the makeup of information systems by investigating the advantages and disadvantages of a proposed new system using the scenario provided as a case study. Scenario – An educational technology company is trialling a new website application for teachers to use in the setting and assessment of homework for students. The new application will also be used as an electronic diary which will eventually replace the hardcopy planner currently being used by students. Parents would also have the option to sign up to the parents' portal of the application to enable them to keep track of their children's progress in school. The website has been developed to the beta phase and the company is keen to test the product on users prior to its launch. The company has approached the head teacher of your local school and is offering a discounted price after its launch, should the school agree to implement this new system for its students after the trial period.	2 hours	
Understanding the makeup of Information systems (continued)	Learners could study and report on all possible advantages and disadvantages of the proposed new system with reference to the points outlined in activities 3.3 and 3.4 in the Teaching Content. Learners could look at similar type applications to provide some context for what the proposed solution could do and its functionalities. https://myhomeworkapp.com/ https://schooltraq.com/p/home/ https://www.mystudylife.com/		

SUGGESTED ACTIVITIES

LO No:	4		
LO Title:	**Be able to present application solutions to meet client and user requirements**		
Title of suggested activity	**Suggested activities**	**Suggested timings**	**Also related to**
How to pitch ideas to an audience	Tutors could work with learners to develop their confidence and presentation skills when pitching ideas to an audience. Learners could understand the planning that is required to produce the appropriate structure for a pitch. The Ideas Foundation has a range of resources and toolkits on its website for both learners and teachers to develop and pitch ideas to an audience. These could be used by learners as preparation to learn the characteristics of delivering an effective pitch. A useful web resource with resources for preparing and developing a pitch: Organisation: i am creative (Ideas Foundation) Resource Title: Toolkit Website Link: http://iamcreative.org.uk/resources/student/32/6	2 hours	Unit 7 LO4 Unit 10 LO4
How to anticipate client queries	Tutors could organise mock interviews for learners to be familiar with likely questions and expected responses. This should equip learners with the skills required to answer questions when pitching ideas to an audience. Learners could prepare a presentation with a list of questions about the responses they provided during the interviews to enable tutors to provide learners with the most appropriate responses expected. The feedback from each learner could be discussed and shared with the group to provide learners with a better understanding of anticipating client queries and how to respond to them..	2 hours	
The purpose and features of prototypes	Learners could research prototypes, their purpose and benefits. It is also important for learners to distinguish between sketches and prototypes in order to be clear about how and when to use prototypes. A useful web resource for learners to research prototypes and their use: Organisation: Usability Resource Title: Prototyping Website Link: http://www.usability.gov/how-to-and-tools/methods/prototyping.html	1 hour	

Title of suggested activity	Suggested activities	Suggested timings	Also related to
The ways of gathering user feedback	Learners need to be able to collect feedback from users that covers all aspects of the application design prototype. Learners would need to research and consider different methods of collecting data. The National Foundation for Educational Research (NFER) has a section on its website that is used to support individuals new to research, which can be found at: http://www.nfer.ac.uk/schools/developing-young-researchers/en/how-to-develop-research-instruments.cfm	1 hour	
The ways of analysing user feedback	It is important learners know how to analyse the data they have collected from users to see if there are any patterns and trends that stand out. The outcomes of this analysis could provide learners with information to identify and recommend improvements that may be required. Tutors could refer learners to a useful website resource developed by the National Foundation for Educational Research (NFER) to support learners with analysing feedback for finished prototypes. Organisation: National Foundation for Educational Research Resource Title: The Evaluation Website Link: http://www.technologystudent.com/designpro/eval1.htm	2 hours	
Understanding client needs when implementing improvements to application designs	Learners could be taught the role of the client and end user when analysing feedback for a new, or improvements to an existing, application design. It is important learners understand they should be empathetic when designing applications and show they have full knowledge of what the client wants instead of what they think is required. Microsoft has an article and references to further reading in a section on their website which provides information about how application developers and clients can work together to bridge the gap between what clients want and what developers tend to produce. Organisation: Microsoft Corporation Resource Title: Business Improvement Through Better Software Architecture Website Link: https://msdn.microsoft.com/en-us/library/bb266336.aspx The centre could liaise with an employer, preferably one that is involved with application design. This could provide learners with the opportunity to gain a better understanding of how they collect feedback from clients and what they do with the feedback received to make changes to the application.	1 hour	

The small print

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