

Pearson

BTEC Higher Nationals in

Computing

PEARSON-SET THEME & TOPIC RELEASE

UNIT 6: Managing a Successful Computing Project

For use with the following qualifications:

Pearson BTEC Level 4 Higher National Certificate in Computing

Pearson BTEC Level 5 Higher National Diploma in Computing

Applies to the delivery of the unit: 1st September 2018 - 31st August 2019

Issue 1



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1.1 Introduction to theme

The Pearson-set theme for use with Unit 6: Managing a Successful Computing Project is:

Artificial Intelligence (AI)

Artificial Intelligence covers computer systems that are able to perform tasks normally requiring human intelligence. These tasks might include visual perception, speech recognition, decision-making, and translation between languages and many more.

AI impacts on every aspect of society and has the potential to be fully integrated into daily work and social lives in the very near future.

This unit will enable students to examine the multi dimensions and applications of AI within computing systems from the standpoint of a prospective computing professional. This will provide the opportunity for students to investigate the uses and potential innovations within computing systems and explore the solutions to the problems presented.

1.2 Topic Selection

Tutors must choose one topic from the list provided below and decide which type of project is most suitable for small-scale research. All students must complete the same topic and project chosen by the tutor, however, if delivering to different cohorts of students then tutors may select a different topic and project for each cohort.

The Pearson-set Assignment Guidance document for Unit 6: Managing a Successful Computing Project, provides additional support and guidance for both tutors and students

Topic

1. How can AI elements be included into an existing system, to improve efficiency or performance?
2. Explore the impact AI may have on a system, its usage and the user experience.
3. What potential benefits and challenges can arise from the inclusion of AI into a system?
4. Consider the potential of AI innovation in a system you have investigated/developed.

1.3 Choosing a project type

You will need to devise a project brief for the student to follow in completion of the assignment for this unit.

The type of project chosen for the selected topic should allow for a sufficient degree of research through the existence of adequate background materials and allow for the depth and breadth of study suitable for a level 4 qualification.

Guidance for tutors is available in the Pearson-set Sample Assessment Material (SAM) for Unit 6: Managing a Successful Computing Project. This provides a range of project types and examples that could be utilised for a project. The project types provided are not exhaustive or mandatory and we do encourage tutors to be innovative with their ideas.

Please note that if reasonable adjustments are necessary to meet a specific individual student need you are able to adjust internal assessments to take this into account. In most cases, this could be a defined time extension or adjustment in the format of evidence.

1.4 Project Evidence / Outcomes

It is important to recognise that project work is reliant on gathering information/data that can be analysed. The scale of the project means that there must be time for both primary and secondary research. An advised model would be to use secondary research to provide a context within which to conduct and interpret primary data collection. The project could then yield data/information which could be compared with the findings of secondary research.

In assessing the project, the assessor should be able to see how project objectives have been met, how students have explored the research material relevant to the project objective, how students have developed and formulated their outcomes and answers to the central questions posed by the objectives and what they have learned in carrying out their project. An important part of the conclusion must be an awareness of the significance of results. Well edited, focused writing and presentation, where the key decisions, developments, lines of argument and salient research are explained succinctly, is preferable to unstructured writing and presentation in which little attempt to select or edit material has been made.

It is important to recognise that there are many different presentation formats and it is important that students think carefully about the suitability of any presentations for their target audience, if this is a chosen format. Their presentations should be appropriate to the audience, both in terms of the nature and level of material they use and also in terms of length. Students should be guided to produce presentations which give a succinct account of the main arguments or developments from their project. The question and answer session should address issues raised by the presentation, but also give students an opportunity to review their work.

Students are to submit a completed technical report as evidence for the unit, however centres would be advised that in addition to their project findings, a project management plan, a completed logbook and performance review should also be submitted. **The project management plan** is designed to define how the project is to be planned, executed and monitored. The project management plan should give details of the actions required for the integration and coordination of various planning activities to carry out the project. **The project logbook** is designed to provide evidence of the project development process and ongoing reflection. It should provide evidence that the student has thought about the direction of their project and in particular, what problems they encountered and steps taken to address them. **The performance review** will provide evidence of reflection and evaluation of the project management process and individual performance.

1.5 Employer engagement

It is advisable that centres look at the Pearson-set Assignment as an appropriate unit to embed employer engagement, although this is not a mandatory requirement. Developing and establishing links with employers enhances the teaching and learning experience and improve students' employability. Where possible, identifying links with employers as part of the delivery of the Pearson-set Assignment could lead to enhancing and supporting student learning. Real-life projects provide students with the opportunity to develop and acquire appropriate skills, knowledge and expertise required by employers.

1.6 Sharing of good practice

The Pearson-set Assignment unit will be a sampled unit by the centre appointed External Examiner (EE) as part of the annual Pearson EE centre visit. The focus will be on standardisation of student assessed work and sharing of good practice. The EE will review and identify exemplars in all aspects of good practice. Good practice will focus on current themes that align to QAA Higher Education Reviews:

- Innovation
- Digital literacy
- Student employability and entrepreneurial skills
- Employer engagement
- Quality of assessment feedback.

1.7 Resources and useful links

Suggested resources and links that centres may find useful are shown below. Centres should choose those resources that are relevant for localised use and complement those with additional resources to support independent research in the chosen topic and project type.

Type of Resource	Resource Titles	Links
Useful resources for underlying principles, examples of published reports on Artificial Intelligence activities		
Published Report	Benefits & Risks of Artificial Intelligence	https://futureoflife.org/background/benefits-risks-of-artificial-intelligence/
Published Report	Artificial Intelligence and Life in 2030	https://ai100.stanford.edu/sites/default/files/ai_100_report_0906fnlc_single.pdf
Published Report	The future of artificial intelligence: two experts disagree	https://theconversation.com/the-future-of-artificial-intelligence-two-experts-disagree-79904
Webinar	How Will Artificial Intelligence Affect Your Life	https://www.youtube.com/watch?v=BfDQNrVphLQ
Webinar	AI & The Future of Work	https://www.youtube.com/watch?v=dRw4d2Si8LA
Useful links for case studies of Artificial Intelligence activities.		
Published Report	Artificial Intelligence: The Next Digital Frontier?	https://www.mckinsey.com/~media/McKinsey/Industries/Advanced%20Electronics/Our%20Insights/How%20artificial%20intelligence%20can%20deliver%20real%20value%20to%20companies/MGI-Artificial-Intelligence-Discussion-paper.ashx
Published Report	The Top 10 AI and Machine Learning Use Cases Everyone Should Know About	https://www.forbes.com/sites/bernardmarr/2016/09/30/what-are-the-top-10-use-cases-for-

Type of Resource	Resource Titles	Links
		machine-learning-and-ai/#5ff4b4a294c9
Published Report	How Companies Are Already Using AI	https://hbr.org/2017/04/how-companies-are-already-using-ai
News Articles (Feb 2018)	"Growth of AI could boost cybercrime and security threats, report warns"	https://www.theguardian.com/technology/2018/feb/21/ai-security-threats-cybercrime-political-disruption-physical-attacks-report
News Articles (Feb 2017)	"5 Unexpected Ways AI Can Save the World"	https://www.entrepreneur.com/article/309109

The Sample Assessment Material (SAM) for Unit 6: Managing a Successful Computing Project should be read in conjunction with the theme and topic release. It provides advice and guidance for both tutors and students.

For any further additional support or queries regarding this document, please email btecdelivery@pearson.com.