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| **Qualification** | | BTEC Level 5 HND Diploma in Computing and Systems Development (Pearson) | | | |
| **Unit Number and Title** | | Unit 13 Computing Research Project | | | |
| **Unit Tutor** | | Amaninder Singh | | | |
| **Internal Verifier** | | Stephen England | | **Date Verified** |  |
| **Summative Assignment** | | Project Design and Implementation | | | |
| **Issue Date** | |  | **Submission Date** | | Friday, 21st June 2019 |
| **Learning Outcomes** | | | | | |
| **Unit Aims and Outcomes:**  The aim of this unit is to offer students the opportunity to engage in sustained research in a specific field of study. The unit enables students to demonstrate the capacity and ability to identify a research theme, to develop research aims, objectives and outcomes, and to present the outcomes of such research in both written and verbal formats. The unit also encourages students to reflect on their engagement in the research process during which recommendations for future, personal development are key learning points.  The Pearson-set theme for use with Computing Research Project for 2018-19 is **Artificial Intelligence (AI)**  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.  **On completion of this unit a learner will:**   1. Examine appropriate research methodologies and approaches as part of the research process. 2. Conduct and analyse research relevant to a computing research project. 3. Communicate the outcomes of a research project to identified stakeholders. 4. Reflect on the application of research methodologies and concepts. | | | | | |
| **Task 1 – Examine appropriate research methodologies and approaches as part of the research process** | | | | | |
| 1. Produce a research proposal that clearly defines a research question or hypothesis supported by a literature review. Choose your own research topic based on the above given theme. Present and discuss the project proposal with your tutor, before mutually agreeing on a final project to continue with. Submit the proposal as part of the final report appendices **(P1).** 2. Complete the Project Proposal Form (available on GOAL), outlining the project title, aims and objectives, as well as other necessities, such as the artefact requirements, resources, timescales (using a Gantt Chart) and any legal and/or ethical considerations. Complete the Ethics form on GOAL. Keep a Project Log Book, which should be updated regularly throughout the duration of your project. Gain **approval** from your tutor before continuing. Submit the Project Proposal Form and Ethics form as part of the final report appendices **(P1).** 3. Examine appropriate research methods and approaches to primary and secondary research. **(P2)** 4. Evaluate different research approaches and methodology and make justifications for the choice of methods selected based on philosophical/theoretical frameworks. **(M1)** | | | | | |
| **Submission Format** | * A completed Project Proposal Form submitted as part of the report appendices * A completed Ethics form submitted as part of the report appendices * A detailed Gantt Chart indicating timescales submitted as part of the report appendices * Evaluation on research methods and approaches | | | | |
| **Criteria Covered** | **P1, P2, M1** | | | | |

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| **Task 2 – Conduct and analyse research relevant for a business research project** | |
| 1. Conduct primary and secondary research using appropriate methods for a business research project that consider costs, access and ethical issues. Primary research will include surveys, questionnaires, interviews etc. **(P3)** 2. Apply appropriate analytical tools, analyse research findings and data. **(P4)** 3. Discuss merits, limitations and pitfalls of approaches to data collection and analysis. **(M2)** 4. Critically evaluate research methodologies and processes in application to a Computing research project to justify chosen research methods and analysis**. (D1)** | |
| **Submission Format** | * Primary and secondary research submitted as part of the report * Project documentation of each stage * Project log book entries submitted as part of the report appendices |
| **Criteria Covered** | **P3, P4, M2, D1** |

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| **Task 3 –Communicate the outcomes of a research project to identified stakeholders** | |
| 1. Communicate research outcomes in an appropriate manner for the intended audience. Use a PowerPoint Presentation to present the completed project, demonstrating the final artefact as well as the procedures used to create it, including those used to control the project and manage any difficulties that were encountered. Show the original plan against the actual plan, highlighting and justifying changes that were made. Finally, make recommendations in regards to the final artefact and end project **(P5)** 2. Coherently and logically communicate outcomes to the intended audience demonstrating how outcomes meet set research objectives. **(M3)** 3. Communicate critical analysis of the outcomes and make valid, justified recommendations. **(D2)** | |
| **Submission Format** | * The final artefact and all supporting documentation (including the original project proposal, the project plan and log book entries) by the set deadline * PowerPoint Presentation of the final project, including recommendations |
| **Criteria Covered** | **P5, M3, D2** |

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| **Task 4 – Reflect on the application of research methodologies and concepts** | |
| 1. Reflect on the effectiveness of research methods applied for meeting objectives of the Computing research project. **(P6)** 2. Consider alternative research methodologies and lessons learnt in view of the outcomes. **(P7)** 3. Provide critical reflection and insight that results in recommended actions for improvements and future research considerations. **(M4)** 4. Demonstrate reflection and engagement in the resource process leading to recommended actions for future improvement. **(D3)** | |
| **Submission Format** | * The final artefact – Project report and all supporting documentation |
| **Criteria Covered** | **P6, P7, M4, D3** |

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| **Grading Criteria** | | | |
| **Learning Outcome** | **Pass** | **Merit** | **Distinction** |
| **LO1** Examine appropriate research methodologies and  approaches as part of the research process | **P1** Produce a research  proposal that clearly  defines a research question  or hypothesis supported by  a literature review.  **P2** Examine appropriate  research methods and  approaches to primary and  secondary research. | **M1** Evaluate different  research approaches and  methodology and make  justifications for the choice  of methods selected based  on philosophical/theoretical  frameworks. | **D1** Critically evaluate  research  methodologies and  processes in  application to a  computing research  project to justify  chosen research  methods and analysis. |
| **LO2** Conduct and analyse research relevant for a  computing research project | **P3** Conduct primary and  secondary research using  appropriate methods for a  computing research project  that consider costs, access  and ethical issues.  **P4** Apply appropriate  analytical tools, analyse  research findings and data. | **M2** Discuss merits,  limitations and pitfalls of  approaches to data  collection and analysis. |
| **LO3** Communicate the outcomes of a research project to  identified stakeholders | **P5** Communicate research  outcomes in an appropriate  manner for the intended  audience. | **M3** Coherently and logically  communicate outcomes to  the intended audience  demonstrating how  outcomes meet set research  objectives. | **D2** Communicate  critical analysis of the  outcomes and make  valid, justified  recommendations. |
| **LO4** Reflect on the application of research methodologies  and concepts | **P6** Reflect on the  effectiveness of research  methods applied for  meeting objectives of the  Computing research project.  **P7** Consider alternative  research methodologies  and lessons learnt in view  of the outcomes. | **M4** Provide critical  reflection and insight that  results in recommended  actions for improvements  and future research  considerations. | **D3** Demonstrate  reflection and  engagement in the  resource process  leading to  recommended actions  for future  improvement. |