# Luminus Technical University College - Assignment Brief (RQF)

## Higher National in Computing

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| **Student Name** | | **Rashed Hasan.** | | | **Language of assessment** | | | **AR** | **EN** |
| **College ID:** | | |  | |
| **Pearson ID:** | | |  | |
| **Unit Number and Title** | |  | 1. **Managing a Successful Computing Project** | | | | | | |
| **Academic Year** | | **2023/2024** | | | | | | | |
| **Unit Tutor** | | **Amneh Shaban** | | | | | | | |
| **Internal Verifier Name and Approval (Signature)** | | **Tariq Abu Rashed** | | | | **Approval Date: 30/11/2023** | | | |
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| **Assignment number and Title** | | **1** | **Big Data and IoT Technologies within Maternity Department** | | | | | | |
| **Issue Date (1St Submission)** | | **3/12/2023** | | **Submission Date (1st Submission)** | | | **27/1/2024** | | |
| **Issue Date (2nd Submission)** | | **29/1/2024** | | **Completion Date (2nd Submission)** | | | **1/2/2024** | | |
| **Submission Format** | | | | | | | | | |
| **Format:**  The submission is in the form of **3** documents, **Project Management Plan**, **Technical Report Template** and **Performance Review Template**. In addition, to the **Weekly Log Books**. You are required to make use of headings, paragraphs and subsections as appropriate, and all work must be supported with research and referenced using the Harvard referencing system. Please also provide a bibliography using the Harvard Referencing System.  **Submission:**  Students are mandatory to submit the assignment in due date and in a way requested by the Tutor. The form of submission will be a soft copy posted on the LMS (D2L).  **Note:**  The Assignment must be your own work, and not copied by, from another student, or from books etc. If you use ideas, quotes or data from books, journals or other sources, you must reference your sources, using the Harvard style. Make sure that you know how to reference properly, and that understand the guidelines on plagiarism. If you do not, you definitely will not pass. | | | | | | | | | |
| **Unit Learning Outcomes** | | | | | | | | | |
| **LO1** | Establish project aims, objectives and timeframes based on the chosen theme | | | | | | | | |
| **LO2** | Conduct small-scale research, information gathering and data collection to generate knowledge to support the project. | | | | | | | | |
| **LO3** | Present the project and communicate appropriate recommendations based on meaningful conclusions drawn from the evidence findings and/or analysis. | | | | | | | | |
| **LO4** | Reflect on the value gained from conducting the project and its usefulness to support sustainable organizational performance. | | | | | | | | |
| Transferable skills and competencies developed | | | | | | | | | |
| The assignment offers students the chance to explore various aspects of big data  from the perspective of computing professionals or data scientists. It also  encourages investigations into the applications, benefits, limitations, and  responsibilities associated with big data and provides solutions to the problems it  aims to solve.  The assignment offers students the chance to explore various aspects of big data  from the perspective of computing professionals or data scientists. It also  encourages investigations into the applications, benefits, limitations, and  responsibilities associated with big data and provides solutions to the problems it  aims to solve.  It offers students the chance to explore various aspects of big data from the perspective of computing professionals or data scientists. It also encourages investigations into the applications, benefits, limitations, and responsibilities associated with big data and provides solutions to the problems its aims to solve. In addition, students learn to create project plan that includes Gantt Chart using appropriate tools. | | | | | | | | | |
| **Vocational scenario:** | | | | | | | | | |
| Over the past decade, the term “Big Data” has gained increasing popularity. Initially, it referred to data generated in massive volumes, such as internet search queries, weather sensor data, and social media information. Nowadays, Big Data represents large amounts of information from diverse sources that cannot be processed conventionally or without computational intervention. Big Data can be stored in structured, unstructured, or semi-structured formats.  Many Systems and Organizations generate massive quantities of big data on daily basis, some of which are publicly available for analysis. Consequently, Machine Learning Systems have been developed to sift through this data, rapidly identify patterns, and solve problems. This has led to the emergence of Data Science Analytics as a discipline to design, build and test machine learning and artificial intelligence systems.  Leveraging Big Data requires a broad range of knowledge and skills, creating new opportunities for previously inaccessible organizations. It allows business to gain a comprehensive understanding of global trends, enabling more accurate and up-to-date decision-making. Big Data can help identify potential business risks earlier and minimize costs without compromising innovation. However, the rapid application of Big Data raises concerns about security, the ethical storage of personal data from multiple sources, and the sustainability of energy requirements in large data warehouses.    You as a member of the Research and Development (R&D) Department in TechKnow Company, have been assigned to a mini-project to find out the application of Big Data and IoT/AI to potential future developments. As an example, medicine and healthcare, virtual worlds, and scientific research.  You have been asked to **plan -as a project**-, to make **a performance review**, and to **do an interview-based research** about a maternity department within a Jordanian hospital. The main research's aim is to make a study about the ability of using the Big-data and IoT technologies within the maternity department to help the hospital's research and management departments with real-time monitoring, data archiving, and automation features. | | | | | | | | | |
| Assignment activity and guidance | | | | | | | | | |
| **Task 1) Create a comprehensive Project Management Plan by doing the following:**   1. Within the **(1.1\_SCOPE)** in the (Project Management Plan Template): 2. **Plan** and **Construct** the project scope that include:    1. The project **requirements**.    2. The general project **aims and objectives.**    3. The project starting and ending **dates**.    4. Identify who will be involved – **the external and internal stakeholders**-. 3. **Generate** a **Work Breakdown Structure** (WBS) with clearly **(1.3\_PHASES)**, **(1.4\_ACTIVITIES)**, and **(1.5\_TASKS).**      1. Within the **(1.2\_MILESTONES)** in the (Project Management Plan Template) **Present** the project milestones with their description and delivery dates. 2. Within the **(1.6\_EFFORT) and (1.7\_RESOURCES)** in the (Project Management Plan Template) **Present** the effort and the resources for **each task** in your **Work Breakdown Structure (WBS)**.      1. Within the **(2.1\_SCHEDULE)** in the (Project Management Plan Template) **Make** a **Gantt Chart** to illustrate the project schedule with realistic time allocated for each activity\task and clearly defined deadlines. 2. Within the **(2.2\_DEPENDENCIES)** in the (Project Management Plan Template) there are four types of dependencies, list your project dependencies for each activity.   **Task 2) Small-Scale Research:**  **Carry out** a research by making a study about a maternity department within a Jordanian hospital, by applying a **mixed interview** that consists of close-formatted questions and open-ended questions -quantitative and qualitative research methodologies-. The research must contain the following:   1. **Research title.** 2. **Research summary.** 3. **Introduction**: Introduce the subject of the research by showing the ability of using the Big-data and IoT technologies within the maternity department to help the hospital's research and management departments with real-time monitoring, data archiving, and automation features. 4. **Related work**: Discuss briefly the published research that technically relates to your proposed work. 5. **Discussion and analysis**: 6. Describe your mixed interview. 7. Investigate and show the collected data by using **proper tools**. 8. Measure the reliability, accuracy, and appropriateness of the applied **close-formatted questions vs the applied open-ended questions.** 9. **Conclusion**: Intended to help the readers understand why your research should matter to them after they have finished reading your research. The conclusion must **Outline** appropriate recommendations based on your analysis of research and data. 10. **Reference List**: That indicates all of the sources that you used to write your research. This includes anything that you summarize, paraphrase, or quote in your assignment. You have to use the **Harvard** referencing system.   **Task 3) Communicate Appropriate Findings:**   1. **Criticise** and **Measure** in depth your **project management process**, during answering the "**B & C & D**" questions in the "**Performance review file**". 2. **Measure** the **strengths and weaknesses** of the **selected tools** that you have used in your research and how did it support your findings, during answering the "**G**" question in the "**Performance review file**". 3. Criticise and Measure in depth **the research** and the **data analysis tools** you have used in your project, during answering the "**G**" question in the "**Performance review file**".   **Task 4) Review on the Research and Performance**   1. **Review** the value on yourself of your research by showing what you learned from the research process, during answering the "**E & F**" questions in the "**Performance review file**". 2. **Measure** the importance of your project plan and your research to meet the project aims, during answering the "**B**" question in the "**Performance review file**". 3. **Review** and **Judge** **in depth** how your project plan can support Techknow Company to sustain its projects' performance in the future. The "**H**" question in the "**Performance review file**". | | | | | | | | | |
| **Recommended Resources**  **Please note that the resources listed are examples for you to use as a starting point in your research – the list is not definitive.**  **Draw.io**  **Microsoft Visio**  **Instagantt.com**  **https://plantomsplanner.com**  **Google Forms**  **Microsoft Forms** | | | | | | | | | |

**Learning Outcomes and Assessment Criteria**

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| Pass | Merit | Distinction |
| **LO1** Establish project aims, objectives and timeframes based on the chosen theme. | | **LO1 & 2**  **D1** Critically evaluate the project management process and appropriate research methodologies applied. |
| **P1** Devise project aims and objectives for a chosen scenario.  **P2** Produce a project management plan that covers aspects of cost, scope, time, quality, communication, risk and resources.  **P3** Produce a work breakdown structure and a Gantt Chart to provide timeframes and stages for completion. | **M1** Produce a comprehensive project management plan, milestone schedule and project schedule for monitoring and completing the aims and objectives of the project. |
| **LO2** Conduct small-scale research, information and data collection to generate knowledge to support the project. | |  |
| **P4** Carry out small-scale research by applying qualitative and quantitative research methods appropriate for meeting project aims and objectives. | **M2** Evaluate the accuracy and reliability of different research methods applied. |

**Learning Outcomes and Assessment Criteria**

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| Pass | Merit | Distinction |
| **LO3** Present the project and communicate appropriate recommendations based on meaningful conclusions drawn from the evidence findings and/or analysis. | | **LO3**  **D2** Critically evaluate the research and data analysis tools used in the project development stages. |
| **P5** Analyse research and data using appropriate tools and techniques.  **P6** Communicate  Appropriate recommendations as a result of research and data analysis to draw valid and meaningful conclusions. | **M3** Evaluate the selection of appropriate tools and techniques for accuracy and authenticity to support and justify recommendations. |
| **LO4** Reflect on the value gained from conducting the  project and its usefulness to support sustainable  organisational performance. | | **LO4**  **D3** Critically evaluate how the project supports sustainable organisational performance. |
| **P7** Reflect on the value of undertaking the research to meet stated objectives and own learning and performance. | **M4** Evaluate the value of the project management process and use of quality research to meet stated objectives and support own learning and performance. |