**ASSIGNMENT 1 BRIEF**

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| **Qualification** | **BTEC Level 5 HND Diploma in Computing** | | |
| **Unit number** | UNIT 13: Computing Research Project | | |
| **Assignment title** | Proposing and conducting a research project | | |
| **Academic Year** | 2022 – 2023 | | |
| **Unit Tutor** | PhD., NGUYEN QUANG HUNG | | |
| **Issue date** |  | **Submission date** |  |
| **IV name and date** |  | | |

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| **Submission Format:** |
| *Format:* The submission is in the form of 1 document  You must use font *Calibri size 12, set number of the pages and use multiple line spacing at 1.3. Margins must be: left: 1.25 cm; right: 1 cm; top: 1 cm and bottom: 1 cm.* The reference follows Harvard referencing system.  *Submission* Students are compulsory to submit the assignment in due date and in a way requested by the Tutors. The form of submission will be a soft copy posted on <http://cms.greenwich.edu.vn/>  *Note:* The Assignment *must* be your own work, and not copied by or from another student or from  books etc. If you use ideas, quotes or data (such as diagrams) 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 get failed* |
| **Unit Learning Outcomes:** |
| **LO1** Examine appropriate research methodologies and approaches as part of the research process  **LO2** Conduct and analyse research relevant for a computing research project  **LO3** Communicate the outcomes of a research project to identified stakeholders |
| **Assignment Brief and Guidance:** |
| **Guidances**  Notice:  You have to set you own research question in the research proposal base on the previous range of topic. The research question must be specific enough example: the audience of the research(job, age..), kind of devices(personal devices, household appliances…)  The recommended outputs of the research are two reports. The first report should cover at least the following sections:   1. Introduction the purpose of the research   Introduce the research’ purpose, main aims and objectives of the project. What the research will do and don’t  **P1**: appropriate research question, aim, related documents in the research proposal (Linked to section 5)   1. Literature review    * Discuss research methodologies: primary research, secondary research, qualitative, quantitative, scientific method, research processes, population in research…    * Specify which research methods will be used to carried out the research    * Do secondary research about your topic    * Conclusion, propose **initial hypothesis** after the literature review and need to confirm in primary research   **P2**: clearly discuss previous methodologies with examples, academic references  **M1**:justifications for the choice of methods selected based on philosophical/theoretical frameworks which can be seen in [**section 2 and** **3**]   1. Primary research    * Design of primary research: which techniques will be used to collect data such as interview, questionnaire, experiment,..; the population of the research. All the data collected in this stage must be supplied in the appendix   **P3**: clearly provide evidence of carryout primary research in [**section 3**] and in [**section 2**]  **M2**: Discuss merits, limitations and pitfalls of approaches to data collection and analysis  **D1:** Critically evaluate research methodologies and processes and use it effectively which can be seen in secondary research and primary research   1. Analyse the result of the primary research   **P4**: Effective using analytical tools to analyse research findings and data  **P5:**   * It should confirm or reject the hypothesis in the literature part with appropriate justification * Provide recommendations for improving the system or future research which could enhance the results of the current research.   **M3:**   * Effectively suggest the research’s results to some audience(how it is useful for them)   **D2**: Excellent research with useful findings and recommendations   1. Approved project proposal-appendix 2. Approved project plan-appendix 3. Ethical form 4. Other materials which collected while conducting primary research: interview scripts, audio, experiment notes-appendix |
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| Learning Outcomes and Assessment Criteria | | |
| Pass | Merit | Distinction |
| **LO1** Examine appropriate research methodologies and approaches as part of the research process | | **LO1 & 2**  **D1** Critically evaluate research methodologies and processes in application to a computing research project to justify chosen research methods and analysis. |
| **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. |
| **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 | | **D2** Communicate critical analysis of the outcomes and make valid, justified recommendations. |
| **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. |

**Group name: PTK**

**Group members:**

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**Group topic:** The Carbon Footprint of Information and Communication Technology (ICT): Estimation, Trends, and Strategies for Mitigation

**10 research question:**

1. How do estimates of the carbon footprint of ICT vary across different studies, and what factors contribute to these differences?

2. What is the current and projected trend of carbon emissions from the ICT sector, and how does it compare to other industries?

3. How do regulations and policies aimed at reducing ICT emissions differ across different regions, and what are their effectiveness?

4. How do different ICT devices and services contribute to carbon emissions, and what are the most effective ways to reduce their impact?

5. How do cloud computing and data centers contribute to carbon emissions, and what are the most promising approaches to making them more sustainable?

6. What is the potential of using renewable energy sources to power the ICT sector, and what are the major barriers to adoption?

7. How can ICT be used to promote sustainability in other industries and sectors, and what are the potential benefits and challenges?

8. What are the social and economic implications of reducing ICT emissions, and how can they be addressed?

9. What are the most effective ways to educate and inform the public about the carbon footprint of ICT, and how can this lead to behavior change?

10. How can governments and businesses work together to create a more sustainable ICT sector, and what are the most promising approaches?