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|  | Assessment Brief | | 2023-2024 |
| Module Title: Master’s Project | | |
| Module Code: CO4804 | | Level 7 |
| **Master’s Project** | This assessment is worth 100% of the overall module mark | |

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| THE BRIEF / INSTRUCTIONS In this assessment you are to complete a substantial project showcasing the skills you have developed applying knowledge from your previous modules. You will work individually to research and produce an artefact or collect and examine primary data to help solve a clearly defined problem chosen by you.  You will document your planning, research, design, implementation and evaluation in a substantial report. Your research will be completed under the guidance of a supervisor who will meet with you throughout the duration of the project and guide you in the process of managing and completing a project of this size.  **KEY DELIVERABLES**  This is likely to be the largest piece of assessed work on your course, so to support you the report has been split into component parts that are to be delivered as formal submissions throughout the academic year. The final report will be an aggregate of the following 5 deliverables.  **Deliverable 1: Proposal**  You should produce a proposal document of approximately 2 to 3 pages that clearly defines the following:   * Problem Statement - A brief outline of the problem your project aims to address. * Ethical Analysis – a discussion of the potential ethical issues surrounding the problem domain and any considertaions you will need to make to ensure your project is completed in line with the ethical standards expected of a computing professional. * Risk Assessment – An investigation into the potential risks of the project, contingencies and how risks can be mitigated * Health & Safety Assessment – An investigation into the potential risks both to yourself, the public and users of your artefact. * Time & Resources Plan – How you present your plan for managing your time and project resources is up to you. Your plan should detail how you intend to spend the time and resources on the project to work towards solving the problem outlined in your problem statement.   **Deliverable 2: Introduction, State of the Art, Methodology**  This deliverable will form the first three sections of your project report, and should consist of approximately 8 pages (4000 words) It should contain the following:   * Introduction – This should expand (or clarify) the problem space your project is situated in. In this section you should clearly identify **what** the problem is and should be broken down into component parts where necessary. You should discuss any appropriate standards and legal implications at this point. You should also indicate **why** the problem is significant and worthy of attention. You should discuss the impact of both solving and not solving your stated problem at this point. Finally you should discuss **how** you are going to work towards solving the problem. You should state a single high level aim within the context of the problem defined and list 6 to 8 objectives that are progressive and measurable that work towards meeting that aim. * State of the Art - This should be a review of the current body of knowledge in your chosen problem area and should clearly outline the boundary between what is known in your chosen area of work and what is not known. This should be in the form of an academic literature review. You should also note any different research methodologies that have been applied within the existing body of knowledge in your chosen problem area and note any implications for your own work. * Methodology – This should outline a high level plan for how you are going to address the problem. It may be informed by the methodologies identified in the ‘State of the Art’ section and should outline how your methodology is going help achieve all the objectives outlined in pursuit of the main aim presented in your introduction. You should discuss how you will progress through the objectives and how you will know when they have been completed. You should also outline your intended process for evaluation at this point (to check whether or not you have addressed the projects overall aim). Finally you should provide an expanded indication on how you plan to use your remaining time/resources on the project.   **Deliverable 3: Design and Implementation (to include project artefact or research findings)**  This deliverable will form the fourth and fifth sections of your report and will consist of approximately 5 or 6 pages (2500 words). It will consist of the following:   * Design – This section will present an analysis of the projects requirements and provide a specification for a solution that attempts to meet those requirements. The section should provide a design outline that is appropriate for your project (E.g. system architecture, network architecture, UML diagrams etc.). This section should also briefly discuss the development methodology that has been used. If research focused, for example data collection in the form of a survey, then careful consideration of the nature and type of question must be explored and discussed. There must be discussion of the approach for data analysis and the statistical testing for investigation. * Implementation – This section should provide a critical review of the key problems encountered during your implementation and how they were overcome. The section should showcase the level of technical challenge that your project has achieved, but should NOT simply describe, step by step, exactly what has been done. Pseudo code can be used to explain important parts of your project, but actual code samples should be included in an appendix away from your main report. You should also provide a review and and reflection of the testing processes undertaken during the development of your project and make use of appendices for presenting test data where necessary. For research projects, statistical and significance testing and use of inferential statistics must be discussed and documented along with appropriate visuals.   **Deliverable 4: Evaluation, Discussion and Conclusions**  This deliverable forms the final three sections of your project report and is a reflective account of how your project achieved what it set out to do and should be approximately 5 or 6 pages long. It should consist of the following:   * Evaluation Process – This section should provide a critical reflection of the evaluation process itself. You should present your approach to evaluation and relect on it. It should revisit the original aims, and evaluate the solution developed against the problem domain. * Discussion – This should be a critical reflection of the evaluation outputs (findings) against the problem domain identified. You should state at this point whether or not the solution (artefact) provided solves the problem you set out to solve. In this section you should also critically reflect on any feedback you have received from your markers from past components and discuss how this feedback could be addressed. * Conclusion – This short final section (approximately half a page) should summarise the overall outcome of the project and outline any scope for further work.   **Deliverable 5: Viva Exam (Poster Presentation)**  You will be asked to present your work at a poster presentation event during exam week. This is an opportunity to showcase your work to a wider audience and forms a compulsory part of your project assessment.  You should produce a poster of A1 size. The poster should display information summarising the project's problem domain, aims, artefact, achievements and conclusions. Use small amounts of text, pictures and diagrams to communicate the essence of your project concisely and effectively. The purpose of a poster is to outline your project in a way that is easily understood and stimulates interest and discussion.  *Note: You will not be able to pass the project module if you fail to attend the viva examination.*  **FORMATIVE DELIVERABLES**  To give you the best possible opportunity to get feedback on your practical work, there are two formal formative milestones for receiving feedback on your project artefact.  **Artefact Milestone 1: Minimum Viable Product (Demo to Supervisor)**  This is a formal demonstration to your supervisor early in semester 2. You should be aiming to showcase a ‘minimum viable product’ at this point that goes some way to achieving your original objectives. The aim at this point is to work your artefact/research up to a passable standard, and get feedback from your supervisor about what can be done to increase the quality of your solution and (if required) get it up to a passable standard.  **Artefact Milestone 2: Show and Tell (Demo to Supervisor)**  This is another formal demonstration that aims to focus on showcasing a near final product. It is a final opportunity to receive formative feedback on the project artefact and how effectively it meets the original aims of the project. Your supervisor will be able to raise any significant concerns at this point allowing you time to make any necessary adjustments before the final artefact submission.  **ASSESSMENT CRITERIA / REQUIREMENTS**  Your work will be assessed against 4 core criteria. Knowledge and Understanding, Scholarly practices, Research and enquiry, and professional and life skills. A marking matrix will be used in the marking of each deliverable submitted. You can find the marking matrix in Appendix 1 of this brief. Your feedback for each deliverable will consist of a highlighted marking martrix indicating appropriate general points of feedback on the work. In addition, for each component you will also receive brief overall summary of your markers overall impression of the submitted work. You will also receive up to three points of feedback indicating areas of improvement to work on for the next deliverable submission.  **ADDITIONAL ASSESSMENT REQUIREMENTS**  To pass this module, you need to achieve a mark of 50% or above, and attend and pass the viva/poster presentation element of this assessment. LEARNING OUTCOMES ASSESSED  |  |  | | --- | --- | | **1.** | Synthesize plans that take account of legal, ethical and professional issues and report on progress. | | **2.** | Develop solutions according to a set of requirements. | | **3.** | Contextualise the project work aligning it with academic literature or with other solutions. | | **4.** | Create a software product or carry out an empirical investigation. | | **5.** | Communicate the process and product / findings of the work in an appropriate format. | | **6.** | Reflect on the value of the work achieved with reference to relevant research done in the field. | | **7.** | Critically reflect on the process of completing a significant project. | |

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| PREPARATION FOR THE ASSESSMENT Before completing each component you should discuss the component deliverables with your supervisor. Before final submission you may want to show a draft version of your submission to your supervisor for some formative feedback. |

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| RELEASE DATES AND KEY HAND IN DEADLINEs Assessment release date: Friday 06/10/2023  Assessment deadlines dates and times:   |  |  |  |  | | --- | --- | --- | --- | | **Component** | **Deadline** | **Weighting** | **Words/Pages** | | Proposal | Fri 3rd Nov 2023 | 10% | 1000/2 | | Introduction, State of the Art, Methodology | Fri Dec 1st 2023 | 20% | 4000/8 | | Minimum Viable Product | w/b 5th Feb 2024 | Formative | Demo | | Show and Tell | w/b 18th March 2024 | Formative | Demo | | Design & Implementation (including artefact) | Fri 19th Apr 2024 | 35% | 2500/5 | | Evaluation and Conclusions | Friday 3rd May | 20% | 2500/5 | | Poster / Viva Exam | S2 Exams (TBC) | 15% | A1 Poster |   Please note that these are the final time you can submit – not the time to submit!  Your feedback / feed forward and mark for this assessment will be provided within 15 working days of each component submission |

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| SUBMISSION DETAILS All Deliverables should be submitted via the appropriate links on the CO4804 Blackboard space located in the ‘Assessment’ folder.  Written deliverables should be submitted in Microsoft Word .docx format.  Consult your supervisor on the most appropriate form of submission for your project artefact. If possible we recommend to compress into a single .zip format. Save your work using the following naming convention: SurnameFirstname.xxx  You should submit the deliverables for your viva (poster & video) on the day of your viva presentation. |

**Appendix 1: HEQF Level 7 Masters level**

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| Marks | 0-10 | 25-45 | 52-58 | 62-­‐68 | 74-­‐80 | 87-­‐100 |
|  | Fail | Fail | Pass | Merit | Distinction | Distinction |
| **Knowledge and understanding of field, and intellectual skills**  *e.g. analysis and synthesis; deploying logical argument supported by evidence; focus on topic; drawing conclusions* | Demonstrates little knowledge of the field.  Demonstrates significant weaknesses in the knowledge base, and/or simply reproduces knowledge without evidence of understanding.  Shows little or no critical ability.  Poor, inconsistent analysis. | Demonstrates knowledge of the field and awareness of current evidence and issues, but with some notable weaknesses. Lacks knowledge and understanding of some key areas.  Offers some appropriate analysis, but with some significant inconsistencies which affect the soundness of argument and/or conclusions.  Demonstrates very limited critical ability. | Demonstrates a sound knowledge and understanding of material within a specialised field. Demonstrates an understanding of current theoretical and methodological approaches and how these affect the way the knowledge base is interpreted.  Provides evidence of relevant and sound analysis within the specialised area, with some critical evaluation.  Is able to analyse complex issues and make appropriate judgements. | Produces work with a well-­‐ defined focus.  Demonstrates a systematic knowledge, understanding and critical awareness of current problems and/or new insights, much of which is at, or informed by, the forefront of the academic discipline, field of study or area of professional practice.  Is able to evaluate methodologies critically and, where appropriate, to propose new hypotheses.  Is able to deal with complex issues both systematically and creatively, making sound judgements in the absence of complete data. | Produces work of exceptional standard, reflecting excellent understanding.  Displays mastery of a complex and specialised area of knowledge and skills, with notable critical awareness of current problems and/or new insights at forefront of field. Shows excellent ability to evaluate methodologies critically and, where appropriate, to propose new hypotheses.  Deals with complex issues systematically and creatively, making excellent judgements. | This work meets and often exceeds the standard for distinction, as described in the 70-­‐ 85 band, across *all* sub-­‐ categories of criteria: knowledge and understanding of subject; intellectual skills; research skills; use of research-­‐ informed literature and other scholarly practices; and skills for life and professional employment.  This work is of publishable quality, with only very minor amendments, and would be likely to receive that judgement if submitted to a peer-­‐reviewed journal.  Work is of such a quality that the student is clearly highly capable of doctoral research in the discipline and, in principle, should be prioritised for a postgraduate research grant. |
| **Research and enquiry**  *e.g. framing and creating questions; using appropriate methods for gathering evidence; awareness of methodological benefits/ limitations; ethics and integrity; analysis of evidence; communicating findings for a given context and audience* | Little or no skill demonstrated in selected techniques applicable to own research or advanced scholarship.  Lacks any understanding of how established techniques of research and enquiry are used to create and interpret knowledge | Demonstrates some skill in selected techniques and/or approaches applicable to own research or advanced scholarship, but with significant areas of weakness.  Lacks sufficient understanding of how established techniques of research and enquiry are used to create and interpret knowledge | Demonstrates understanding of and skills in selected techniques/ approaches applicable to own research or advanced scholarship.  Shows some originality in the application of knowledge, and some understanding of how established techniques of research and enquiry are used to create and interpret knowledge in the discipline Able to communicate effectively with a given  audience. | Displays a comprehensive understanding of and skills in techniques/approaches applicable to own research or advanced scholarship. Shows originality in the application of knowledge, and a good understanding of how established techniques of research and enquiry are used to create and interpret knowledge in the discipline. Able to communicate very effectively arguments, evidence and conclusions to specialist and non-­‐specialist  audiences. | Conducts research highly effectively, using technical and/or professional skills as appropriate.  Displays exceptional grasp of a range of techniques applicable to own research or advanced scholarship. Shows originality in application of knowledge, and excellent grasp of how knowledge is created and interpreted in the discipline. Able to communicate at a very high level arguments, evidence and conclusions to  diverse audiences |

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| **Scholarly practices**  *e.g. use of relevant literature; academic writing; academic honesty, referencing and citation* | Fails to evidence or discuss/apply appropriate examples of literature relating to current research and advanced scholarship in the field.  References to literature/ evidence and use of academic conventions are  flawed/irrelevant. | Can evidence and discuss/apply examples of literature relating to current research but lacks critical engagement. References to appropriate literature/ evidence and use of academic conventions are insufficient and/or inconsistent. | Can evaluate critically examples of literature relating to current research and advanced scholarship in the field.  Makes consistently sound use of appropriate academic conventions and academic honesty. | Is able to evaluate critically a range of literature relating to current research and advanced scholarship in the discipline.  Makes consistently good use of appropriate academic conventions and academic honesty. | Is able to evaluate critically, with notable insight, a range of literature relating to current research and advanced scholarship in the discipline  Makes consistently excellent use of appropriate academic conventions and academic honesty | |
| **Professional** | Significant weaknesses evident in key areas such as digital literacy, communication , problem-­‐solving and project management. Inability to adapt.  Inability to work flexibly, independently and/or as part of a team. | Demonstrates generally effective employability skills, including communication and problem-­‐solving, but with some problematic areas of weakness.  Limited ability to adapt.  Ability to work flexibly, independently and/or as part of a team, but with areas of weakness. | Shows a consistently good level of employability skills, including team working, project management, IT/computer literacy, creativity and flexibility.  Demonstrates capabilities to support effective communication in a range of complex and specialised contexts.  Shows consistent ability in tackling and solving demanding problems.  Can plan and direct own learning.  Demonstrates ability to advance own knowledge and skills.  Demonstrates the independent learning ability required for continuing professional development. | Shows a high level of employability skills, including team working, project management, digital literacy, creativity and flexibility.  Demonstrates very effective communication in a range of complex and specialised contexts.  Demonstrates self-­‐direction in tackling and solving demanding problems.  Can act autonomously in planning and implementing tasks at a professional or equivalent level.  Demonstrates attitudes needed to advance own knowledge, understanding, and skills.  Demonstrates the independent learning ability required for continuing professional development. | Shows a very high level of employability skills, including team working/leadership, project management, digital literacies ad practices, creativity and flexibility.  Demonstrates very high level communication skills in a range of complex contexts, and ability to write at publishable standard.  Demonstrates autonomy and notable originality in tackling and solving demanding problems.  Shows a high level of consistency and autonomy in planning and implementing tasks at a professional or equivalent level.  Demonstrates the skills and attitudes needed to advance own knowledge and understanding, and to develop new skills to a high level.  Demonstrates the independent learning ability required for continuing professional development. | |
| **skills and** |
| **attributes** |
| *e.g. creativity;* |
| *digital literacies and* |
| *practices;* |
| *presentation skills;* |
| *ethical awareness* |
| *and integrity;* |
| *collaboration and* |
| *team-­‐working;* |
| *self-­‐management;* |
| *project and time* |
| *management;* |
| *leadership;* |
| *innovation;* |
| *ability to recognize* |
| *own strengths and* |
| *weaknesses, and to* |
| *take steps to* |
| *improve, by* |
| *identifying and* |
| *choosing* |
| *appropriate methods* |
| *(online resources,* |
| *courses, peer* |
| *learning etc.).* |
| Marks | 0-10 | 25-45 | 52-58 | 62-­‐68 | 74-­‐80 | 87-­‐100 |