**THE UNIVERSITY OF HUDDERSFIELD**

School of Computing and Engineering

**ASSIGNMENT SPECIFICATION**

| Module | Details |
| --- | --- |
| Module Code | CHP2524 |
| Module Title | Individual Project |
| Course Title/s | All in Computer Science Dept. |

| Assessment | Weighting, Type and Contact Details |
| --- | --- |
| Title | Final Year Project – Product & Report |
| Weighting | 100% |
| Mode of working for assessment task | Individual  This assessment task is to be completed on an individual basis and there should be no collusion or collaboration whilst working on and subsequently submitting this assignment. |
| Module Leader | George Bargiannis (Jenny Carter) |
| Module Tutor/s | Jenny Carter ([j.carter@hud.ac.uk](mailto:j.carter@hud.ac.uk)) plus supervisors |

| Submission | Submission and Feedback Details |
| --- | --- |
| Hand-out date | Monday 25 September 2023 |
| How to submit your work. | The report must be submitted to the submission point on Brightspace.  Another submission link will be provided where a zip file of any associated files can be uploaded (e.g. containing code files and so on if/where necessary). |
| Submission date/s and times | **Monday 29th April 2024**: deadline for submission of the final report  **30th April – 17th May 2023**: arrange presentation time with your supervisor and examiner |
| Expected amount of independent time you should allocate to complete this assessment | 400 hours |
| Submission type and format | * Formal Report (~8000 words), Please make sure you fully understand the process of referencing - consult the APA referencing guide, or contact the Student Guidance team for advice   + Additional words – e.g. supporting a description of the product can go into the appendices. These do not use any of the word count.   + Our Subject Librarian is a good source of advice on research and on referencing. * Project Presentation – for this you need to prepare PowerPoint slides (or equivalent). The presentation time slot is 30 minutes and will be with your supervisor and your examiner. We generally expect you to present your work and also demonstrate key elements of your practical work in 20 minutes leaving 10 minutes for questions. |
| **Date by which your grade and feedback will be returned** | **Friday 7 June 2024 (unmoderated results)**  **Tuesday 18th June 2024 (official results day)** |

| Additional Guidance Information | Details |
| --- | --- |
| Your responsibility | It is your responsibility to read and understand the [University regulations regarding conduct in assessment](https://www.hud.ac.uk/registry/current-students/taughtstudents/conductinassessment/).  Please pay special attention to the assessment regulations (section 10) on [Academic Misconduct.](https://www.hud.ac.uk/registry/current-students/taughtstudents/academicmisconduct/)  In brief: ensure that you;   1. DO NOT use the work of another student - this includes students from previous years and other institutions, as well as current students on the module. 2. DO NOT make your work available or leave insecure, for other students to view or use. 3. Any examples provided by the module tutor should be appropriately referenced, as should examples from external sources.   Further guidance can be found in the SCEN Academic Skills Resource and UoH Academic Integrity Resource module in Brightspace.  If you experience difficulties with this assessment or with time management, please speak to the module tutor/s, your Personal Academic Tutor, or the School’s Guidance Team. ([sce.guidance@hud.ac.uk](mailto:sce.guidance@hud.ac.uk)). |
| Requesting a Late Submission | It is expected that you complete your assessments by the published deadlines. However, it is recognised that there can be unexpected circumstances which may affect you being able to do so. In such circumstances, you may submit a request for an extension.  Extension applications must be submitted before the published assessment deadline has passed.  There are two types of extension that you may request. You will be required to indicate which one you are applying for when you submit the request for Late Submission via MyHud/MyStudies.   1. Self-certified illness extension of up to 5 working days.  * Evidence will not be required for this type of request, but you are limited to two self-certified extension requests in any academic year.  1. Extension request of up to 10 working days.  * This extension requires you to submit appropriate evidence in support of your request.   The maximum extension that can grant is 10 working days.  Accepted grounds for an extension   * Serious short-term illness or accident (of a nature which in employment would result in a health-related absence); * Evidence of a long-term health condition worsening; Emerging mental health condition, or worsening of an existing mental health condition; * Bereavement.   If you are unable to submit work within the maximum late submission period of 10 days, contact the School’s Guidance Team. ([sce.guidance@hud.ac.uk](mailto:sce.guidance@hud.ac.uk)), as you may need to submit a claim for Extenuating Circumstances (ECs). |
| Extenuating Circumstances (ECs) | An EC claim is appropriate in exceptional circumstances, when an extension is not sufficient due to the nature of the request.  You can access the [EC claim form](https://www.hud.ac.uk/registry/current-students/taughtstudents/extenuatingcircumstances/) on the Registry website; where you can also find out more about the process.  You will need to submit independent, verifiable evidence for your claim to be considered.  Once your EC claim has been reviewed you will get an EC outcome email from Registry.  If you are unsure what it means or what you need to do next, please speak to the [Student Support Office](mailto:sce.student.support@hud.ac.uk) – Room SJ1/01  An approved EC will extend the submission date to the next assessment period (e.g July resit period). |
| Late Submission  (No ECs approved) | Late submission, up to 5 working days, of the assessment submission deadline, will result in your grade being capped to a maximum of a pass mark.  Submission after this period, without an approved extension, will result in a 0% grade for this assessment component. |
| Tutor Referral available | NO |
| Resources | * Please note: you can access free Office365 software and you have 1 Tb of free storage space available on Microsoft’s OneDrive – [Guidance on downloading Office 365](https://students.hud.ac.uk/media/universityofhuddersfield/content/documents/computingservices/office365/Office365-AppsDownloadGuide.pdf). |

**Final Year Project**

1. **Assignment Aims**

To allow you to demonstrate the ability to undertake research, manage time, use initiative, learn independently, discuss and write cogently on a subject requiring independent learning, design and build a tangible product in an advanced or relatively novel area of informatics, and perform a critical evaluation.

Your project report should include a significant amount of research and concept development, and use of evaluation techniques and critical appraisal.

1. **Learning Outcomes:**

Your project report and demonstration will assess all learning outcomes of the module.

With respect to the project’s subject area, you will, by the end of the module:

1. Discuss key ideas and concepts relating to current, leading research and development.
2. Appraise tools and techniques relevant to the solution of the project’s identified problem.
3. Systematically develop a product that forms a solution to an identified problem, using sound decision making and initiative.
4. Gather, examiner and appraise research data and materials, including an evaluation of legal, social, ethical and professional issues as related to the project.
5. Employ technical and design tools and techniques relevant to the development of the product, including identifying and assessing their risks.
6. Critically evaluate the product and the product’s development process, recognising good practice.
7. Critically assess, communicate and present project deliverables by producing weel-constructed documentation and presentations.
8. **Assessment Brief**

**3.1 Summative work**

To successfully complete the project you will need to:

* Develop a product. This can take many forms – a piece of software, a web-based application, implementation of an information system, design and development of a game, a set of recommendations developed through research, a prototype.
  + - Please note that for BCS accredited courses the project must include a software artefact.
    - For courses not accredited by the BCS, the product does not have to be a software artefact. It could be a set of recommendations for example or a well-designed prototype for a game etc.
    - *In all cases, check with your supervisor*.
* Write a **report**. This, along with your **product** forms the core outcome of your project. See below for details of what is expected of your report, and for some advice on its development.
* Complete a review of the **professional, legal, ethical, and social issues** raised by your project. In almost all cases this will be fairly straightforward. In those few cases where this is not the case your supervisor will be able to help you with this. Make sure this section relates to your project area rather than a general consideration of these issues.
* **Presentation** – for this you need to prepare PowerPoint slides (or equivalent). The presentation time slot is 30 minutes and will be with your supervisor and your examiner. We generally expect you to present your work and also demonstrate key elements of your practical work in 20 minutes leaving 10 minutes for questions. You can include a copy of your slides (and transcript/notes if you have them) in the appendices of your report.

All of these components are essential.

**3.2 Formative work**

In order to help you develop your final report there will be a number of formative assessment points along the way. These are not, however, a substitute for regular meetings with your project supervisor, but a supplement. These formative assessment points are:

* A finalised project proposal. You are not required to submit this to Brightspace but must ensure that the proposal is sound by this point through meetings with your supervisor.
* A literature review. In this you will critically evaluate the research that you have undertaken in the first semester. You will also evaluate professional, legal, ethical and social issues (PLESI) as related to the project.
* A poster presentation. Here you will present your work in the form of a poster that you submit to Brightspace and with which you also attend a poster presentation event. You will have the opportunity to receive feedback from your examiner and supervisor.

**3.3 Assessment**

Final assessment will be carried out after the project report is submitted, and after the project presentation. The project will be marked holistically, with one mark of 100%, which will be based on the project report, the project product and demonstration, and on a mark for student engagement, which will partially be guided by engagement with the literature review, poster presentation, and the product specification, design and development plan, and partly by your engagement with your supervisor and examiner.

These three components are weighted as follows:

(1) report (50%)

(2) product and presentation (40%)

(3) student engagement (10%)

Please note that the project presentation forms an integral part of component (2), and that the marks for component (2) cannot be allocated without a presentation taking place.

**3.4 Dates and deadlines**

Please take note of the following important dates and deadlines:

* 29th April 2024: deadline for submission of the final report
* 30th April – 17th May 2024: Presentations to take place

|  |  |
| --- | --- |
| **Students doing project in Year Long mode** | **Students doing project in term 2 ONLY** |
| **Thursday 26th Oct - Initial Proposal** | **Thursday 1st Feb - Initial Proposal** |
| **Thursday 7th Dec - Lit Review** | **Thursday 22nd Feb - Lit Review** |
| **Consolidation week – Poster Session –**  **Friday January 12th (submit to Brightspace by 12 noon on January 4th for free printing)\*** | **March - Poster Session -**  **Wednesday March 20th** |
| **Monday 29th April – Final report** | |
| **30th April – 17th May – Presentations** | |

\* You can bring your poster on the day but will need to pay for your own printing if you choose to do this.

1. **Additional Important Information**

**4.1 Project duration**

The project duration is approximately 30 weeks for students doing project in both terms, or approximately 15 weeks for those doing it in term 2 only - these students are allocated twice as much time per week on the project. The project is worth 40 credits and is thus a substantial piece of work. To pass the module you must work hard and steadily on it throughout the duration. This is your module, you make the running. Your supervisor is there to guide and advise you, but you have the responsibility to make sure that you progress steadily on your project.

**4.2 Sources of project ideas**

Project ideas can be either taken from staff suggestions on Brightspace, from departmental research group websites, from your placement year, or can be of your own invention. In any case it is your responsibility to decide on a project idea within the scope of your subject area discipline.

**4.3 Nature and scope of projects**

All projects should be academic in nature and create a tangible product. Project reports need to be carefully and objectively written, refer to and show understanding of scholarly material reflecting the state of the art in the project’s area. Projects must be aimed at solving a problem or exploring an area in-depth that relates to your subject, and may involve novel ideas, original thinking, cutting edge research issues, a technically or creatively demanding implementation. Naturally, students must attempt a project that is related to the course they are studying. Students on BCS accredited courses must also ensure that their project includes the development of a software artefact.

**4.4 Supervisors**

Each project student must have a supervisor. You should meet with your supervisor regularly, typically once a week, to check progress and get help with any aspect of your project.

**4.5 Project proposal**

At the start of the year, you should discuss your project proposal with your supervisor. The project proposal should:

(a) identify the problem the project is attempting to solve;

(b) identify the project’s product and the potential clients/users of the product;

(c) identify the body of research that will be carried out to help solve the problem;

(d) contain a short time plan for the duration

**4.6 Keeping records**

You need to keep records of everything you do, so that you can provide evidence in your report that you have: planned well and adapted well when problems occurred; conducted tests at each stage of the project, for example: tested your product or checked your ideas with client/users; integrated knowledge & skills from different taught modules; developed new or enhanced knowledge & skills.

**4.7 Research**

During the first few weeks especially you are expected to research the subject area of your project and analyse and specify the clients’ requirements in detail, where applicable. You must aim to be an expert in the subject area by the middle point of your project. You must properly cite and reference the work of other authors, whether you studied their work in journals, books or on the web.

**4.8. Variation in projects with respect to course**

Each course or group of courses may have restrictions on the scope of projects, the nature of the products output from the project, and the detailed deliverables of the project. Course specific requirements will be communicated to you by your course leader if this applies. All students on BCS accredited courses are expected to design and build a software product.

1. **Final report - overview**

**5.1 Word count**

It is difficult to give a definitive expected word count, due to the wide range of projects. However, it is worth noting that the formal guidelines adopted suggest 8000 words for a 40 credit module. This may seem short, however it is important to note that quality is much more important than quantity, and that a well written report is likely to be briefer than a poorly written one covering the same ground. If, therefore, you find your report becoming significantly longer than the guidance length of 8000 words you should probably think carefully whether you could rewrite the report more succinctly. This indicative word count is exclusive of any appendices you may provide (but please note that appendices do not form part of the assessed material). If the report is overly verbose e.g. going beyond 10000 words, you would need to think about reducing your word count. Doing this, while still covering the same ground, is likely to improve the quality of your report.

**5.2 Outline structure**

The report should include the following:

1. **Abstract** - explains in less than 300 words the contribution of the project
2. **Introduction** - explains the context, the problem or area, the clients, the users or audience. Indicate any changes you have made to the initial product specification.
3. **Background research/Literature review** – an expansion of the research section in your literature review submission, changed to fit into the final report. This should include consideration of legal, social, ethical and professional issues. It’s likely you will revise your research questions or aims slightly once this part is completed.
4. **Methodology** – consider existing documented methodologies that can help you achieve your aims and ultimately explain what *your* methodology will be. This is like a recipe for achieving your aims: setting out how you will go about the project, how you will get answers for the questions/aims you set.
5. **Implementations, findings and analysis** – This is where you now follow your methodology and document what you do as you go along. It is the main ‘What you did’ part of the project.
6. **Evaluation/Discussion of the product** – here you need to evaluate how well your product meets the goals set out at the design and specification phase.
7. **Evaluation of the project** – you must critically evaluate your performance, as a whole, on the project. It is in this part that you also discuss your engagement with the specialist support facilities provided on Brightspace.
8. **Conclusions** – Draws out the main points from the previous sections where you have discussed the findings of your work and the project process.
9. **References and bibliography**
10. **Appendices** – These should contain anything you have produced for the project that can be textually represented but which is not appropriate to appear in the report body itself e.g. program code, product user guide, detailed designs etc. This must include the completed ethics review form. This does not form part of the assessed material. Make sure you refer the reader to the appendices where appropriate so that they are guided to look at them.

**5.3 To be handed in**

The report must be submitted to the submission point on Brightspace. Another submission link will be provided where a zip file of any associated files can be uploaded (e.g. containing code files and so on).

1. **Final report – detailed structure**

**6.1 Abstract [100-300 words]**

A concise description of the project, identifying the aims, product or design, results and conclusions. If you are not sure what an abstract is, take a look at some academic papers.

**6.2 Introduction**

The project should involve the development and implementation of a product that was designed to solve a problem and/or satisfy a recognised need for an intended/actual client or business market and a set of identified users. This section should make the reader aware of the application context of the project, the problem the project was attempting to solve and the final product.

**6.3 Background research**

This will be strongly based on your literature review. The importance of the academic research should not be underestimated as it forms the foundation of the project. The aim of this section is to describe and critically review the literature that influenced the design and development of your product. Decisions made during the design and implementation of the product need to be justified and this can only be done with reference to material gathered during the research phase.

The research should not be restricted solely to the area of the product itself but should include as many related topics as possible. In some instances, a solution to a problem can be influenced by knowledge from areas that may at first appear unrelated to the original topic. Unless you have invented something that no one else has ever thought of before, there will be existing products that show some similar to yours. You should therefore provide a critique of these products, highlighting the features that will have influenced the development of your product. This should additionally include consideration of professional, legal, ethical and social issues.

The views of your client and/or users must also be taken into account at this stage and they must be included in this section of the report.

It is important to structure this section of the report correctly. When writing your background research you should not do the following:

* present a list of all the articles that you have found during your research to prove that you have been to the library
* write a series of paragraphs that summarise the content of each referenced article.

Instead, you should organise this section into sub-sections, each of which discusses one element of your project, using references you have found to support your arguments. As an example, consider a project concerned with the selling of coal hods (container for coal which sits next to the fire) on the Web. The background research section may include these sub-sections:

* a review of current trends in e-commerce including some examples. Evaluation studies would be useful here.
* a look at the future of coal as a source of energy for the home in order to define the market for such a product.
* interface design, highlighting issues that directly influence the design of the Web site.

To summarise, the aim of this section is to bring together information from a wide variety of sources, analyse why some solutions work and why some fail and relate this to your specific problem. You should present enough information that will enable you to justify the design decisions you make later on. It is important that this background research to the project is undertaken in a systematic manner. The mark awarded for this section will be based on the depth of the student's research into the problem area and the ability to present this material in a structured, well-argued and coherent fashion.

References to source material must follow the report writing style guide.

**6.4 Methodology**

Consider existing documented methodologies that can help you achieve your aims and ultimately explain what *your* methodology will be. The methodology is like a recipe for achieving your aims: setting out how you will go about the project, how you will get answers for the questions/aims you set; deciding if you need to do experiments, which, if any, software development methods, will you use agile, prototyping? Do you need to do any questionnaires? and so on. You will also identify what languages if any you may need to use. Use literature on similar approaches to help you decide and justify your approach.

**6.5 Main ‘what you did’ part of project**

This part of the report should describe how the product was designed and implemented and should refer to the methods and processes employed. You should also relate your design decisions to observations made in your background research. Don’t forget to include the product design and specification!

Applying development techniques (for software, systems design etc.) should result in associated documentation (e.g. detailed specifications, ERDs, interview records, questionnaires, systems models). A clear description of the implementation should be presented in chronological order, highlighting the problems encountered, the solutions adopted, attempting to justify your decisions. (N.B. Do not write this as a diary of your work with dates and times).

Projects involving data analysis should comment on the methods employed, results obtained and the main conclusions.

Projects involving software development (this includes Web based products) should include software designs using an appropriate software design method (including details of testing and debugging). Show the final product (with screen shots) together with a description of its functionality.

Any relevant code you have produced should be included in the appendix. Do not include pages and pages of source code.

Some products may be research based or design based so the product might be a design or a set of recommendations – this section is still the same though – writing up what you did, discussing the findings and doing some analysis of your work/results/findings.

NOTE – all courses that have BCS accreditation must have some kind of electronic product or part of the product might be that. For example, if your project is more research based and you produce some recommendations for an organisation about something, then the recommendations form part of your product but you could also do a web site that illustrates them, or some training materials. Please check with your Course Leader about BCS accreditation to be sure about your course but as a guide the following courses are accredited by the BCS:

* Computing
* Computer Science, Computer Science with Games Programming, Computer Science with Cyber Security, Computer Science with Artificial Intelligence
* Software Engineering
* Computing in Business
* Information Technology

**6.6 Evaluation of the product**

Without effective evaluation of your product you will not be able to ascertain whether you have produced anything useful and therefore you will not get good marks for your project. Even if you produce an amazing piece of software you will not get high marks unless you have undertaken appropriate user evaluation studies and have analysed the results.

You must state the techniques employed (e.g. cooperative evaluation, field studies, walkthroughs, query techniques (interviews, questionnaires etc.) and describe how you went about your tests, giving examples of any prepared material. You must also state the number of users involved in the tests, giving appropriate information on their knowledge and background.

Results from the evaluation studies must be given. If there is a large amount of data then put some examples in an appendix and summarise the result in the main text.

Conclusions, based on the results from the evaluation, should be stated clearly.

Some experimental investigation projects may involve user evaluation studies as part of the implementation process, in which case the evaluation of the product will be a critical analysis of the conclusions drawn from such investigations against relevant research publications.

User evaluation studies may not be appropriate for some projects, for instance those involving the development of mathematical or research solutions. However, it is still necessary to evaluate what you have produced, in the context of published research material.

With all products it is important to identify the good points and state why you consider them to be good, if you do not then the examiner may conclude that these were a fluke and may not give any credit. It is equally important to identify the bad points and analyse why they are present in your product. If the examiner notices weaknesses in your product and these have not been identified by you then you will lose marks.

As there may not be an opportunity to physically demonstrate your software product, you need to include evidence of it and how it works etc. in this section and in the appendices; maybe referring to screenshots that you have also placed in the appendices to illustrate the features and so on.

**6.7 Evaluation of the project**

This section, and the next, provide an opportunity for you to draw conclusions regarding the project activity as a whole, including an assessment of the learning experience and the additional knowledge and skills acquired. You should discuss the successes and the failures, problems and solutions in the context of this learning experience.

You should look back at your initial aims and discuss the extent to which you have covered these aims. Were you perhaps over ambitious? Discuss where your product lies in relation to the broad area in which you have been working, referencing material from your research. Suggest improvements to your product, justifying their choice. Is there scope for the application of your product in other areas?

You should also discuss the degree of success (or failure) of your project planning and how it compares with your project development plan. It is unlikely that everything went to plan. But remember that your project is a learning experience and as such it is important that you identify any unexpected problems and describe how you coped with them.

One common perceived problem is running out of time. But resist the temptation of blaming all the shortcoming of your project on this as it often highlights poor time management (i.e. leaving too much to the last minute!). The written report is important and should not be curtailed in favour of adding some extra bells and whistles to the product.

If your software development product includes a user guide and/or a report to the client on maintenance and perhaps marketing issues then these should be included in the project report as appendices.

**6.8 Conclusions**

This is where you bring it all together, summarising all that has gone before, and also looking ahead. What have you produced, and why? How successful have you been in meeting your goals? What is/are the major contribution(s) of your work?

You should also think about and provide some discussion of ‘future work’ here. If you, or someone else, were to further develop your work, what form would that further development take?

**6.9 References and Bibliography**

Here you list the sources that you have consulted during your work on your project. The references are works that you have directly cited in the text of your report. The bibliography should contain sources that you have consulted, but not cited. Please note that you do not have to include a bibliography. You should only include those sources that are relevant to your project. You should ensure that all of your sources are of an adequate academic standard – if in doubt ask your supervisor.

Please make sure that you keep to a consistent style, both in the way you indicate cited sources in the text, and in the way you list them in the references and bibliography. The University's preferred referencing style is APA 7, and you should therefore use this style, unless there are good reasons not to (e.g. your product is a research paper which you are intending to submit to an outlet that requires a different referencing style). Information on the APA 7 referencing style is available on <https://library.hud.ac.uk/pages/apareferencing/>.

**6.10 Appendices**

This is where you include items that will aid, but are not essential to, understanding of your project – e.g. extended designs, detailed statistics, questionnaire designs, presentation slides etc. The appendices do not form part of the assessed material, and do not, therefore count towards the recommended word count.

There should be a minimum of one appendix, namely the ethical review form.

1. **Project presentation**

You are required to prepare and deliver a presentation (incorporating a demonstration of your software artefact where appropriate). We suggest you use PowerPoint (or similar) to take us through your work. The presentation will be arranged between you and your supervisor and examiner. You need to communicate with them to find a suitable time.

You may consider creating a video recording of your product to show it working in case it doesn’t work on the day, or if it makes it easier to guide the viewers through the product quickly and efficiently. This could be embedded in the slides or viewed from an online website like YouTube. However, this is not essential. It is a suggestion for those who think it may help.

Some advice:

*Above all else, be enthusiastic. Enthusiasm can do a lot to hide nerves and perhaps some content lacking from your presentation. The audience will remain on the edge of their seats when they see how interested you are in your work and will become motivated and supportive of you as well.*

Dawson, C. W. (2015). Projects in Computing and Information Systems: A Student's Guide, 3rd edition.

1. **Marking Scheme**

Please refer to the marking guides and marking spreadsheet provided in the Assessment area of Brightspace.

1. **Grading Rubric**

Please refer to the marking guides and marking spreadsheet provided in the Assessment area of Brightspace.