COMP1004
Computing Practice

40 CREDIT MODULE

ASSESSMENT: 80% Coursework
20% Practice

MODULE LEADER:	**Dr Shirley Atkinson**
CO-TEACHER	**Dr Liz Stuart**
MARKING PANEL:	**Dr Vasilios Kelefouras**
	Dr Lingfen Sun
	Dr David Walker
	Mr Paul Watson

MODULE AIMS

- To familiarise students with the software development lifecycle
- To develop techniques to elicit requirements from abstract problems
- To expose students to both technical and non-technical skills required to complete a software engineering project

ASSESSED LEARNING OUTCOMES (ALO):

1. Articulate the phases of the software development lifecycle.
2. Define suitable functional and non-functional requirements that when implemented in software will solve a given problem.
3. Identify and describe operational considerations of software, including the physical systems upon which they reside, cyber security and networking.
4. Identify and discuss trade-offs in requirements analysis and the production of software versus operational considerations such as time and cost.

Overview

This document contains all the necessary information pertaining to the assessment of *COMP1004 Computing Practice* module. The module is assessed via **80% coursework** and **20% Practice**.

The sections that follow will detail the assessment tasks that are to be undertaken. The submission and expected feedback dates are presented in Table 1. All assessments are to be submitted electronically via the respective DLE module pages before the stated deadlines and all meetings are held via Zoom and the link provided via the scheduler.

	Submission Deadline	Feedback
1 Project Proposal	**Thursday 22nd October @ 4pm**	26th October @ 4pm
2 Project Initiation document	**Thursday 5th November @ 4pm**	During stand-up sessions
3 Weekly Summary	**Weekly during term time from 6th November @ 4pm**	During stand-up sessions
4 Bi-Weekly stand-up sessions	**Bi-Weekly during term time starting the week commencing Monday 9th November 2020**	During stand-up sessions
5 Marketplace demo	**Tuesday 26th January 2021 0900 – 1700 Mixture of physical and online**	During session
6 Interim Report	**Thursday 28th January 2021 @ 4pm**	25th February by 4pm
7 Final Report	**Thursday 20th May 2021 @ 4pm**	17th June 2021
8 Showcase Presentation	**Thursday 27th May 0900 – 1700 Mixture of physical and online**	22nd June 2021

Table 1: Assessment Deadlines

All assessments will be introduced during the first timetabled session to provide further clarity over what is expected and how you can access support and formative feedback prior to submission.

This project module is an all year, 40 credit, module that provides you with an opportunity to learn how to apply problem-solving techniques to understand how to create technological solutions to solve a problem. This gives you the chance to really understand the core principles of Computer Science, the software development lifecycle and how that applies to the degree you are studying.

You will be required to work on a project of your choice where you will focus on the early stages of the software development lifecycle whilst exploring the operational and technical trade-offs that are inherent in that cycle. By the end of the module, you will have analysed, designed and then developed a prototype of moderate complexity, the culmination is the creation of a simple, yet complete software solution.

Submissions

1 Project Proposal

This section provides you with the information you need for this **individual** submission.

Projects

Project criteria based on your degree are provided in the assessments section on the module DLE site. You must develop your own project proposal based on the project most relevant to your degree. Once you have developed your ideas, you must submit a Project Proposal Document (see below for further details).

Projects will be run using an Agile methodology. This will mean that the work is divided into time-boxed sections called sprints. These time-boxed sprints are two weeks long. They have a rigorous planning and review cycle in those two weeks. There will be scrum meetings with a member of staff where you discuss what work has been done to date, what is planned and any problems that arise.

You must create a Project Proposal Document to ensure your project is appropriate. The proposal document must be written in a professional style, taking care to note spelling and grammar. The proposal document should use the template provided (*1.1 PP Template*) and be submitted as a PDF. Remember to delete the light grey prompt text. DO NOT try and submit a different file type. The template requires you to have the following sections:

1. Project Title.
2. Introduction. Describe what the document is for and tell the reader at a high level what they will find in the sections that follow.
3. Existing skills. Outline here the experiences and skills you have at the moment that you believe will help you in the project. For example, have you had a part time job serving in a café or bar? I am sure there is a tremendous skill in understanding people's needs. This can translate into good listening skills that are important for helping to understand what the project owner wants.
4. Required skills. Outline here the skills you think you will need to be successful in this project. Discuss here any mentoring from staff that you feel would be beneficial.

Deliverable 1.2 Project Proposal

By ***4pm on 22nd October*** you must have submitted your Project Proposal Document for your project. Your Project Proposal Document must be submitted as a PDF via the appropriate links on the DLE. This is an individual submission. No other file type is allowed.

Submit a PDF document containing your Project Application document. You will receive a brief comment on your proposal by 26th October which will one of the following options:

1. Proposal ok. Please continue.
2. Proposal needs adjustment as follows: xxx . Please adjust and continue. No need to resubmit.
3. Proposal requires rework. Please attend to xxx . Please make an appointment to discuss with module staff before progressing to project initiation.

2 Project Initiation

This section provides you with the information you need for this **individual** submission.

This deliverable will be the output from the culmination of your sprint zero. Sprint zero should be spent getting yourself ready for delivering on the project. You should be researching the background to your project and understanding why it is important. This will require you to create a project vision.

Sprint zero also requires you to set up your development environment, sort out a version-controlled repository, identify your test environment, identifying the things that could go wrong and creating an initial product backlog. The product backlog will be an evolving, living document that changes and evolves as the project progresses. You must ensure that there is enough in the product backlog to being with.

You are to use the Office365 planner provided through the University to set up your product backlog and sprint plans. Ensure that Shirley Atkinson and your personal tutor are added to your planner. Do not use other productivity tools that you might consider better, the planner does have weaknesses, but the principles are the same.

Students can apply for a Student Developer pack from GitHub. https://help.github.com/en/articles/applying-for-a-student-developer-pack. Ensure you add Shirley Atkinson to the repository and edit the readme.md file so that your project title, and project vision are clearly noted.

This is the stage where you must give some consideration as to the potential for things to go wrong. Please read around the topic matter and identify what pertinent risks there might be to your project. Once you have identified what could go wrong, you need to also consider the likelihood of that happening and then what you will do about it. Any risks that are a high likelihood and a high impact MUST have actions taken to prevent them.

Use the template for your individual deliverable (2.0 PI Template). This should be uploaded as a PDF. Remember to delete the light grey prompt text.

3 Weekly Summary

This section provides you with the information you need for this **individual** submission which is submitted via the DLE.

Each week you must summarise the activities you have carried out during that week. This should be based upon the product backlog and must provide links to the repository for evidence.

The blogging must be complete by **4pm each Friday** starting from **6th November 2020** and being a weekly entry for term time, finishing in University week 42, 14th of May. Weekly reports are suspended during the two assessment weeks (week commencing 18th January 2021 (26) and 25th January 2021 (27)) when the marketplace demo and the interim deliverables are required.

4 Bi-Weekly stand-up sessions

The week commencing Monday 9th November 2020 15-minute scrum meetings will be held every two weeks during term time with a member of staff from the module. These scrum meetings will take place in the University weeks 16, 18, 20, 26, 30, 32, 34, 39, 41. Your meetings will be with a few other students on the same module. These will be held using Zoom with an option for face-to-face if circumstances allow.

The dates for these meetings will be shown on the DLE closer to the time – not all times are on your timetable, but they will be on days that you have other 1st year modules to attend. (Sessions on Mondays, Wednesdays and Thursdays 0900-1100 and Wednesdays 1100-1300).

The scrum meeting requires that everybody describes their work to-date since previous scrum meeting, present their plans for the following week and describe any barriers they face. The meetings must be short and focused. Prior to the scrum meeting you should review your sprint backlog ensuring that completed items are removed and new items added.

5 Marketplace demo

This deliverable is an individual deliverable that accounts for **30%** of your practice mark.

Tuesday 26th of January for the whole day students are to demonstrate an initial prototype and their software plan. Students are expected to review other projects during the course of the day and to have their own prototype peer reviewed.

The marking panel will circulate amongst you during the course of the day. Computing students from stage two will attend to help provide peer feedback.

Physical presence on campus as well as remote presence is acceptable for this session.

During the course of the day, you must record a short 2 to 4-minute video highlighting what you have gained from the day. Your video should be hosted on YouTube as unlisted and the link submitted to the DLE by the following day (*5 Video Upload*). This combined with your attendance at the event provides 30% of your final mark for the practice element.

The panel will use the following rubric to mark your submission.

Prototype	Prototype does not run or is not present ***0 points***	Prototype demonstration runs with substantial errors. ***18 points***	Prototype demonstration shows basic understanding of project ***22 points***	Prototype demonstration shows reasonable depth of quality. ***26 points***	Prototype demonstration is good. Professional approach shown. ***32 points***	Prototype demonstration cannot be faulted. ***40 points***
Communication	Poor communication or no demo ***0 points***	Demo could be followed by an expert ***18 points***	Communications were appropriate. Demonstration showed basic understanding of project. ***22 points***	Demonstration showed a reasonable depth of quality. Visual provided were good, narrative is clear and not rambling ***26 points***	Excellent communication shown in demonstration. ***32 points***	Faultless delivery of demonstration. ***40 points***
Video	Poor quality/no sound to video ***0 points***	Video could just about be followed by an expert. Narrative is waffly. ***9 points***	Video shows basic understanding but nothing special. ***11 points***	Video is clear and easy to follow. Narrative is clear and not rambling ***13 points***	Clear and precise learning from experience shown in video. ***16 points***	Faultless video delivery with clear discussion of learning in a professional and reflective fashion. ***20 points***

6 Interim Report

This deliverable is an individual deliverable that accounts for **30%** of the coursework mark.

Using the *Interim Report template* (see assessments section on DLE) you must submit one PDF file to the module DLE page. The Interim Report must present an outline to date of the project work completed, an indication of the project work to do, a discussion of any issues arising and a revisiting of the project risk plan and project backlog.

The approximate word count is 3000 +/- 10% as per University rules. You must plan your time appropriately to allow time to draft and re-draft.

The report contains the following sections:

- Introduction: Here you set the scene for the document and what the reader will find.
- Software Development Lifecycle: Discuss here your understanding of the software development lifecycle and how are applying this to your project.
- Project Description: tell the reader why your project was important, present the background to understanding the problem you were addressing and use appropriate literature to solidify your argument. Discuss any identified legal, social or ethical issues that you consider might arise.
- Requirements: Discuss the development of the product backlog, present appropriate UML diagrams, user stories and other requirements engineering artifacts as are appropriate.
- Architecture: Discuss and show with diagrams your proposed architecture for your solution.
- Sprint planning: you should show your sprint implementations to date and discuss outcomes from the reviews carried out for each sprint. Clearly link to your project planner.
- Reflection. Reflect on your activities to date.

The work will be marked using the following rubric.

Introduction (5)	Poorly structured introduction or completely missing ***0 points***	Introduction weak. A number of errors and inconsistencies exist. Substantial room for improvement ***1 points***	Introduction ok. Could be improved. Signposting exists but is not that clear. ***2 points***	Introduction nice and clear. Good outline in introduction. Room to improve however. ***3 points***	Good, clear introduction. Clear outline in introduction as to what follows in report. ***4 points***	Perfect introduction. Introduction sets very clear outline of what follows in report. ***5 points***
Software Development Lifecycle (SDLC) (20)	No discussion in report regarding SDLC ***0 points***	A brief, high level description of SDLC is provided. No more than has been provided in module materials ***9 points***	SDLC presented in a way that indicates understanding. Evidence of reading beyond the module materials provided. ***11 points***	SDLC clearly outlined in a way that indicates a good understanding. Evidence of reading beyond module materials provided. Application of SDLC to project is ok. ***13 points***	SDLC clearly outlined in a way that indicates a good understanding. Evidence of reading beyond module materials provided. Good application of SDLC to project ***16 points***	Faultless description and discussion of SDLC. Clear evidence of wider reading. Faultless application of SDLC to project. ***20 points***
Project (15)	No discussion in report regarding project ***0 points***	A brief outline of the project is provided. Narrative is vague. ***7 points***	Project Vision communicated ok. Background discussed to an ok level ***9 points***	Project Vision clear. Background uses multiple sources to demonstrate understanding of the topic. ***11 points***	Project Vision is good. Background in line with Project Vision providing clear, authoritative sources to demonstrate understanding. ***13 points***	Project Vision is excellent. Background clearly justified. An excellent critique of the background is provided. Clear justification uses authoritative sources to demonstrate why work is of importance. Legal, social or ethical issues clearly discussed with authoritative sources provided. ***15 points***

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Requirements (20)	Little or no indication of requirements ***0 points***	Requirements present but vague and not clearly justified. Diagrams present but have errors. Product backlog incomplete ***9 points***	Requirements demonstrated with appropriate diagrams. Some errors and omissions ***11 points***	Requirements clearly described and coverage for application is good. Appropriate diagrams in place. ***13 points***	Requirements robustly developed in appropriate fashion. Clear diagrams in use. Clear indication of development of requirements. Robust documentation. Little in the way of errors and omissions. ***16 points***	Excellent portrayal of requirements. All diagrams correct. Excellent coverage for expected requirements in report. ***20 points***
Architecture (15)	Little or no indication of architecture ***0 points***	Architecture present but vague. Diagrams present but have errors ***7 points***	Architecture demonstrated with appropriate diagrams. Some errors and omissions ***9 points***	Architecture clearly described. Appropriate diagrams used ***11 points***	Architecture clearly presented with good diagrams. Little in the way of errors and omissions. ***13 points***	Faultless portrayal architecture using appropriate diagrams. ***15 points***
Sprint Plans (15)	No discussion in report regarding sprints or plans ***0 points***	Evidence of weak sprint planning in place. Backlog sparse. Reviews not present ***7 points***	Evidence of sprint planning in place. Backlog is ok. Weak reviews provided. ***9 points***	Sprints and reviews are meaningful. Release plans provided. Backlog developed with indication of priorities ***11 points***	Good sprint planning evident. Meaningful sprint reviews in place. Sprints passed have clear links to commits and implementation ***13 points***	Excellent sprint plans and reviews provided. Product roadmap good and clearly mapping to sprint backlogs. ***15 points***
Reflection (10)	No or very little reflection provided ***0 points***	Reflection not that deep or meaningful. Substantial room for improvement ***2 points***	Reflection ok. Could be improved. ***4 points***	Reflection nice and clear. Attempts to bring ideas together in coherent way ***6 points***	Reflection very good. Clear indication of relevant learning journey provided. ***8 points***	Reflection faultless, clear learning journey discussed with action plan for the future. ***10 points***

7 Final Report

This deliverable is an individual deliverable that accounts for **70%** of the coursework mark.

Your final report must follow the format of your interim report but have an additional section added for discussing the implementation of the project. This must now be a complete representation of the entire project. The rubric for marking is nearly identical to the interim deliverable but instead considers the whole of the project not just Semester 1.

8 Showcase Presentation

This deliverable is an individual deliverable that accounts for **70%** of your practice mark.

Thursday 25th of May for the whole day students are to demonstrate their project.

The marking panel will circulate amongst the students during the course of the day. Computing students from stage two will attend to help provide peer feedback.

During the course of the day, you must record a short 2 to 4-minute video highlighting what you have gained from the day. Your video should be hosted on YouTube as unlisted and the link submitted to the DLE by the following day. This combined with your attendance at the event provides 70% of your final mark for the practice element.

The presentation will be marked using the same rubric as the interim presentation.

General Guidance

Extenuating Circumstances

There may be a time during this module where you experience a serious situation which has a significant impact on your ability to complete the assessments. The definition of these can be found in the University Policy on Extenuating Circumstances here:
https://www.plymouth.ac.uk/uploads/production/document/path/15/15317/Extenuating_Circumstances_Policy_and_Procedures.pdf

Plagiarism

All of your work must be of your own words. You must use references for your sources, however you acquire them. Where you wish to use quotations, these must be a very minor part of your overall work.

To copy another person's work is viewed as plagiarism and is not allowed. Any issues of plagiarism and any form of academic dishonesty are treated very seriously. All your work must be your own and other sources must be identified as being theirs, not yours. The copying of another persons' work could result in a penalty being invoked.

Further information on plagiarism policy can be found here:

Plagiarism: https://www.plymouth.ac.uk/student-life/your-studies/essential-information/regulations/plagiarism

Examination Offences: https://www.plymouth.ac.uk/student-life/your-studies/essential-information/exams/exam-rules-and-regulations/examination-offences

Turnitin (http://www.turnitinuk.com/) is an Internet-based 'originality checking tool' which allows documents to be compared with content on the Internet, in journals and in an archive of previously submitted works. It can help to detect unintentional or deliberate plagiarism.

It is a formative tool that makes it easy for students to review their citations and referencing as an aid to learning good academic practice. Turnitin produces an 'originality report' to help guide you. To learn more about Turnitin go to:
https://guides.turnitin.com/01_Manuals_and_Guides/Student/Student_User_Manual

Referencing

The University of Plymouth Library has produced an online support referencing guide which is available here: http://plymouth.libguides.com/referencing.

Another recommended referencing resource is Cite Them Right Online; this is an online resource which provides you with specific guidance about how to reference lots of different types of materials.

The Learn Higher Network has also provided a number of documents to support students with referencing:

References and Bibliographies Booklet:
http://www.learnhigher.ac.uk/writing-for-university/referencing/references-and-bibliographies-booklet/

Checking your assignments' references:
http://www.learnhigher.ac.uk/writing-for-university/academic-writing/checking-your-assigments-references/