BACS2163 Software Engineering – Assignment

1. Objectives

This assignment provides students with the opportunity to learn and apply the following skills;

- Ability to work as a team to produce a project planning schedule with the use of planning tool like MS. Project and to produce system requirements specification + viewpoint hierarchy.
- Application of various tools and development methodologies, including the production of various analysis and design documentation in the process of system development and good screen design principles to design quality user interfaces.

2. Assessment

The learning outcomes assessed are:
CLO 2: Work in a team to prepare user and system requirements and functional and non-functional requirements as part of the software requirements document. (A3, PLO4).
CLO 3: Present the software requirements document prepared based on the case study. (A2, PLO5).

Contribution of marks to coursework:

- The assignment deliverables*contributes 5**0%** to the coursework component (under CLO2) as follows:

Parts	**Marks**
Assignment report - Part 1	40
Assignment report - Part 2	30
Assignment report - Part 3	30
Total	**100**

**** Note: Tutor has the right to adjust the marks based on the % contribution by each team member.***

- Presentation contributes **20%** to the coursework component (under CLO3).

Refer to the Assignment Rubrics for details.

3. Group Formation

Students will be assigned to groups of **4 - 5** members per team from the same tutorial group by the tutor.

Every team member is expected to contribute and participate actively in the entire process of completing the assignment to develop documentation such as project planning schedule, system requirements, viewpoint hierarchy, architectural design, test plan, and to apply good user interface design principles when designing the user interface. Sharing of ideas and assistance in the completion of assignment among members is required.

4. Assignment Tasks for Part 1, 2, and 3

Students are required to study and analyse an existing/legacy system (manual) of an organisation. With the use of various tools and software development methodologies, you are required to produce the relevant system planning, analysis and design documentation for a new information system (to replace the existing/legacy system) for the organisation. The documentation should include:

Part 1

- **Organization background**. Introduce background of the chosen organization. **[5 marks]**

- **Requirement gathering techniques + Problems of existing/legacy system**. Apply and discuss **TWO (2)** relevant fact-gathering techniques to analyse the problems of existing/legacy system. Identify the major problems of the existing/legacy system. **[10 + 5 marks]**

- **Software quality attributes of the project.** Suggest and explain **FIVE (5)** critical software quality attributes for the new proposed system. Justify your suggestion. You may make any relevant assumptions to support your answer. **[10 marks]**

- **Software process model.** Recommend **ONE (1)** appropriate process model for this project. Explain the suggested model and justification of suggestion. You may make relevant assumptions to support your suggestion. **[10 marks]**

Part 2

- **Project planning schedule**. Prepare Task Allocation List & Gantt Chart for this project. Should make use of Microsoft Project Planning software). **[10 marks]**

- **System requirements**. Compose Functional Requirements for each module and Non-Functional Requirements (Product, Organisation, and External requirements) of the proposed system. **[10 marks]**

- **Viewpoint-oriented analysis**. Carry out a viewpoint-oriented analysis to identify all necessary viewpoints involved in the proposed system and justify the roles/importance of such viewpoints involved. **[10 marks]**

Part 3

- **An architectural design**. Recommend and design **ONE (1)** suitable System Organisation Model. Explain the suggested model and justification of suggestion. You may make relevant assumptions to support your suggestion. **[10 marks]**

- **Test planning and Test Cases**. Prepare a Test Plan which covers Testing Process, Tested Items, Testing Procedure, Testing Requirement, and Testing Constraints for the proposed system. Prepare Test Cases based on the functional requirements identified. **[10 marks]**

- **User interface design principles**. Suggest and explain design principles that will be applied to design the user interface of the proposed system. Justify your suggestion with the relevant prototype. This could be done in any of the language you are familiar (E.g. Java, HTML). **[10 marks]**

5. Assignment Schedule

Week	Practical Task	Deliverable
1	Briefing on practical assignment Organization background	Week 1's task(s)
2	Requirement gathering techniques + Problems of existing/legacy system	Week 2's task(s)
3	Software quality attributes	Week 3's task(s)
4	Software process model	Week 4's task(s)
5	**Assignment Presentation**	**Presentation of Part 1 Recording Submission**
6	MS Project – Project planning schedule based on software process model (task, duration, task dependencies, resources allocation etc.)	Week 6's task(s)
7	System Requirements (Functional and Non-Functional requirements)	Week 7's task(s)
8	Viewpoint Hierarchy	Week 8's task(s)
9	**Assignment Presentation**	**Presentation of Part 2 Recording Submission**
10	System Architectural Design (System Organisation Model)	Week 10's task(s)
11	Test Plan and Test Cases	Week 11's task(s)
12	User interface design principles + Prototype	Week 12's task(s)
13	**Assignment Presentation** **Assignment Submission (Monday, 13th September 2021 by 5:00pm)**	**Presentation of Part 3 Recording Submission** **Softcopy assignment submission**
14	Assignment Feedbacks Make-good (if any)	

6. Oral Presentation

Each student is required to record an online presentation of the assignment tasks (part 1, 2 and 3) as specified and submit accordingly. Oral presentation MUST include visual aids.

7. The Final Assignment Report Format

The final assignment report for all Parts should contain the following items:
(a) Cover sheet (Appendix - FORM 1)
(b) Plagiarism statement with student signatures (Appendix - FORM 2)
(c) Assessment Criteria (Group and Individual)
(d) Table of Contents
(e) Contents for Part 1, 2, and 3
(f) Reference section (Students are required to use Harvard Referencing System format)
(g) Appendices (if any)

The report must be type-written using **MS-Word**. You are recommended to format your report according to the following specification:

Media	**Softcopy** - well written and properly formatted report (Part 1, Part 2 and Part 3) to be submitted via Google Classroom which include all work/deliverables for assignment report and recorded individual presentation for assignment presentation as mentioned above.
Font Size	A body text of font ***size 12*** is required while for headings and subheadings a larger font size must be used.
Font Style	Use ***Times New Roman*** for body text. Main headings and sub-headings should be clearly stated using suitable font styles (e.g. Arial).
Line Spacing	Typed material should be ***1.5-line spaced***.
Alignment	Use ***Justify*** for alignment.
Headers and Footers	Appropriate footers and headers should be used to enhance clarity and presentation.
Page Numbering	Ensure that all pages (except cover page) are numbered.
Paper Size	Use ***A4*** paper (29.7cm x 21cm).

Table 1: Written Report Format

8. Late Submission

All assignments should be submitted by the stated due date as Section 5.
Late submission of the assignment will be handled according to the Guideline for Late Submission of Coursework available at **TAR UC's Intranet→Examinations and Credit Accumulation→Undergraduate→ Guideline.**

PART B : LATE SUBMISSION OF COURSEWORK INFORMATION

Please check/tick one of the information below :

	Late submission of 1 - 3 days after deadline of submission: minus 10 marks
	Late submission of 4 - 7 days after deadline of submission: minus 20 marks
	Late submission of > 7 days after deadline of submission: 0 mark

In certain circumstances, a student may be allowed to submit the assignment late with valid reason. S/he must inform the respective tutor **at least one week before** the assignment is due. The tutor will evaluate whether the circumstance warrants submitting the assignment late, but **no guarantee** that the students will not be penalized.
As a general rule, no extension of time will be granted. The assignment question and its due dates are normally disclosed in advance to students in order that they will be able to manage their time according to different course study progress and complete this assignment on time.

9. Academic Integrity and Plagiarism

Students are required to redo the entire assignment depending on the seriousness of inaccuracy of the answerorif the contents of any part of the assignment does not comply with the requirements of the assignment as requested by the respective lecturer/tutor.

Before submitting your assignment, please make sure that you have complied with **TARUC Plagiarism Policy**. Any cheating, attempt to cheat, plagiarism, collusion and any other attempts to gain an unfair advantage in assessment will cause the students concerned to be penalized.

IMPORTANT: Students found to be dishonest are liable to disciplinary action.

Appendix

FORM 1

FACULTY OF COMPUTING AND INFORMATION TECHNOLOGY

Choose an item.

Choose an item.

Programme: R_____ (Group: _____)

Assignment

BACS2163 SOFTWARE ENGINEERING

Name(Block Letters)	Registration No.	Signature	Marks
1.			
2.			
3.			
4.			
5.			

Tutor's Name: _____

Date of Submission: _____

FORM 2

FACULTY OF COMPUTING AND INFORMATION TECHNOLOGY

Plagiarism Statement and Guideline for Late Submission of Coursework

Read, complete, and sign this statement to be submitted with the written report.

We confirm that the submitted works are all our own work and are in our own words.

Name(Block Letters)	Registration No.	Signature	Date
1.			
2.			
3.			
4.			
5.			