**COMP 246 Part A: Requirements Analysis Document ( 14 Marks)** Please refer to Professor Mohamed Khan, the course lead, for any edits to the document.

**Group Work**: Max 5-6 members in a group

**Introduction**

Each team needs to identify a problem or opportunity for which a software system can be developed. Try to do so during the first week of the course, and obtain the professor approval before starting the project.

There will be a three-part-project assignment in which each team needs to prepare 1) A SoftwareRequirements Specification(SRS) document (Similar to COMP 225) which will be Part A of the Term Project. Software Design (Specifications) Document (SDD) – the main software architecture design artefacts divided into Parts B & C..

It will be helpful to quickly review Chapters 1-8 from COMP 120 & COMP 225. Please see slides folder for these prior Chapters. COMP 246 will review (Requirements Analysis) – Chapter 8, followed by the design chapters 9, 10, 11, 12, 13 & 14 (These are the Design specifications Chapters).

ALL diagrams must follow the UML standards for software development. The best modelling tool to use is Visual Paradigm, a Case tool – please download the Community version at [www.visual-paradigm.com](http://www.visual-paradigm.com). The tutorials provide on the site are very helpful in ensuring easy use of this software.

Use the Community version for all systems modelling and the 30-Day Trial of the Enterprise version for your printed documentation and for code generation if required. You can then simply copy all artefacts into Word for reporting purposes.

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| **Part A: Project Scope and requirements 9 sections**  **I have provided an example for Part A in the Term Assignment folder** |  |  |  |
| Due Week 5 – See Assignment folder |  |  |  |
| Total Marks: 14 points |  |  |  |
| Deliverable Methodology: Agile | **Grade** |  | **Validation Status** |
|  |  |  |  |
| **Section 1: Problem statement** | 2 |  |  |
| 1.1 a) Problem & Need b) List of (i) capabilities and (ii) Benefits  1.1 b) Identify the stakeholders and their roles  1.1 c) Identify the sub-systems of your application ( What are its functional components)  1.4 d) Who are the intended users of the SRS documentation. |  |  |  |
| **Section 2: A Context Flow – Structured Modeling** | 1.0 |  |  |
| 2.1 Draw the non-UML Context Flow Diagram – CFD ( a WHAT diagram) to give a picture view of your application and its interfaces to relevant stakeholders and direct and subordinate external entities.  e.g  Image result for context  diagram in software engineering  **Source: Internet** |  |  |  |
| **Section 3: Requirements – Functional -- UML Use Case Modeling** | 4 |  |  |
| **3.1 Goal Use Cases**  The entire application will be built around Use Cases as mentioned in WLO 1. The key is to identify the primary or the goal use cases. This must be done separately for each subsystem..  Example : D2L ( Brightspace – e.centennialcollege.ca) The main subsystems are Content, Grades, Assessment and Communication. Consider the Content subsystem   |  |  |  |  | | --- | --- | --- | --- | | FR # | Goal Use Case | Role Player | Description | | FR 01 | Post Learning material | Instructor | Instructor selects Content Module and uploads material to the selected folder | | FR 02 | View course Content | Student/Instructor | Student/Instructor selects Content Module and the specified folder to view the material | | FR 03 etc |  |  |  | |  |  |  |  |   Do the same for your Term Project Case application – this will be different for each sub system  **3.2 Use case Diagrams**  For each functional subsystem draw a Use Case Diagram. Four or Five subsystems will require that many Use Case diagrams  **See examples of UML Use Case diagrams in the Visual Paradigm application**  **3.3 User Stories:**  Write user stories for all goal use cases. Arrange by subsystems as you have done in 3.1 and 3.2  *Use the format “As a <role> I want to <goal> so that <benefit> -- one sentence*  Followed an Acceptance Criteria section from the point of view of the user  See Visual Paradigm for User’s story example |  |  |  |
| **Section 4.0 UML Domain Class Diagram** | 3 |  |  |
| 4.1 Provide a list of the classes that will contain objects of your application  Eg In the case of e.centennial application some classes are : Student, Faculty, Course Sections, Grades, email-communication, . Assignments etc  4.2 Draw a domain class diagram showing  a) associations between Classes  b) multiplicities/relationships ( one to one, one to many, many to many with the bridge or associative classes)  c) Hierarchies ( Generalization hierarchies and Whole-Part hierarchies) where relevant  d) Compositions/Aggregations where relevant in Whole-Part hierarchies  e) Attributes of the classes. Omit the methods for the classes for now – this will be done in Part B of the project not Part A. You will use the CRC approach in Part B to get the methods and align them with your Use Cases.  **See examples of UML Class diagrams in the Visual Paradigm application** |  |  |  |
| **Section 5.0 Sketch an ERD to show the tables for your database – the repository for the data created and updated by the processing instructions of your classes -- a non-UML**  See examples of ERD models in the Visual Paradigm application | 1.0 |  |  |
| **Section 6.0: Sketch Two UML Systems Sequence diagram. Of any Two goal use cases - UML Modeling**  **Note:** There is an important difference between a UML System Sequence and UML Sequence diagrams. Sequence diagrams are required in Part B. Do not mix them up  **See examples of UML System Sequence diagram in the Visual Paradigm application** | 1.0 |  |  |
| **Section 7.0 Sketch Two UML State Diagrams of any Two objects – UML Modeling**  **See examples of UML State diagrams in the Visual Paradigm application** | 1.0 |  |  |
| **Section 8.0: Technologies** | .5 |  |  |
| 8.1 Begin the list of relevant technologies that you should be thinking about for the development of your application. a) Mobile OR b) Web Appl.  For each type of application, list the typical tool under the following headings:  Client side (Front-end – GUI )  Business Logic ( Middle layer – Class methods etc)  Data side ( Database) |  |  |  |
| **Section 9.0: Project Management** | .5 |  |  |
| 9.1 Draw Gantt Chart showing the activities from Sections 1 to 8 of this Assignment |  |  |  |
| Total Marks | 14 |  |  |

Use this Saving Format -- **<Name of Course>-<Name of Project>-< Assignment Part>**

e.g **COMP 246-AAA-Part A-SRS**

The names of the Group Members must appear on the documentation cover page.