**Prepared by Mohamed Khan (Professors - Kindly submit any suggestions for edits to me prior to any change to this document – consistency is key to success of the project across sections -- Thank you)**

# COMP 246 OO Software ENGINEERING 2018

# Project & Evaluation GUIDELINES

**Software Requirements:**

* Visual Paradigm
  + - Free Community version: [www.visual-paradigm.com](http://www.visual-paradigm.com) ( Use the Enterprise version at the end of the semester to generate Java skeletal

code from your design class diagram). Please make use of the many tutorials that are available on Visual Paradigm.

**Term Project**

Done in phases and iterations and is based on the THREE principles documented in the IBM white paper for modern software development –

Process-driven and UML based.

These are

1. Iterative and incremental development ( Agile Methodology)
2. Use-Case Oriented ( Users’ Stories)
3. Architecture-Centric ( Class and Sequence diagrams etc)

## Part A –Requirements Analysis– Domain Problem Statement & Model (the Business case)

The process begins with a high-level problem statement which enables the development of different activity diagrams to model the problem domain operations of the organization. The activity diagrams show the requirements with respect to the scope and workflow of the system.

Gathering information is the key to success and getting the correct requirements. – Interviews (users & domain experts), questionnaires, documentation, identifying standards and terminologies in the problem domain.

Part A of the term project is the Domain Business Model which includes

1. A Vision Statement.
2. UML Activity diagrams illustrating the system scope and business workflows
3. Goal Use Cases & Actors By Subsystem
4. Use Case Diagrams
5. Users Stories – provides key additional information on each goal Use Case contained in each of the sub systems.. Use template – use Agile templates
6. Domain Class diagram and an ER Diagram
7. Gantt Chart to be updated at each deliverable point

Please see notes on Users Stories

# Marks Breakdown

For Part A (10 of 30– Due Week 5)

|  |  |  |
| --- | --- | --- |
| Business Modeling – domain Problem | | |
| Subject | Mark |
| Problem statement (Vision Statement + System capabilities + Business benefits) – Chapter 1—See slides 20 & 22 | 0.5 |
| Workflows By Subsystem – Activity UML Diagrams | 2 |
| 1. Use Cases & Actors By Subsystem 2. Use Case diagrams 3. Users Stories for each goal listed by subsystem   < follow guidelines> | 4.0 |
| Domain Class diagram – Chapter 4 - Describe the multiplicities | 1.5 |
| Sketch and ER diagram – Describe the cardinalities | .5 |
| Lists Technology tools for Project Development to date | .25 |
| Project Plan ( Part A)- see tutorial in Additional material folder on ecentennial ( Incomplete) | .25 |
| Class Presentation -- Part A | 1.0 |
| **Total** | **10** |

**Submit to Digital dropbox**

**PARTS B & C will be combined and marked out 20.**

## Part B – Software Design Specifications

Part B of the term project is the software architecture. It includes

1. Detail class diagram and Package diagrams (Complete)
2. System Sequence diagram (5)
3. Sequence Diagrams ( 2)
4. State Machine Diagrams ( 2)
5. Project Plan Update (Incomplete)

In addition to the above you are also required to attach the revised copies of the previous document (corrected version as indicated from instructor feedback) of Parts A and B. The objective is to present a complete document incorporating all functional and analysis and design details for each iteration of your project.

MARKS Breakdown

For Part B (10 points) – Weeks-9&10

|  |  |
| --- | --- |
| Analysis & Design Specifications | |
| Subject | Mark |
| Refinement to Part A: ( For example Add Aggregation and Composition to the domain class diagram) | .5 |
| Detailed Design class diagram with attributes and methods (Annotate with CRC cards) – Package by subsystems – introduce a UI/View Class Plus Controller/Handler Class for each sub-system - Refine your hierarchies. See Chapter 4, 5, 6, 12 & 13 -- Rationale for this is iterative development by sub-system. Consolidate your classes with methods in ONE diagram.(Note: For the design class diagram DO NOT show multiplicities. Use instead the Navigations See Chapter 13 Slide 22) | 5.0 |
| System Sequence Diagram ( 5 different goal use cases –one suggestion is to choose one goal use case from each sub system except the report sub system) & Sequence diagram - choose any two cases from the Systems Sequence Diagrams for the decomposition– Chapter 12 & 13 | 1.0 |
| State Machine diagrams for 2 separate Objects – Chapter 4 | 1.0 |
| Project Plan – from Part A – include Part B | .5 |
| Presentation - deductions | 2.0 |
| **Total** | **10** |

In addition to the above you are also required to attach the revised copies of the previous document (corrected version as indicated from instructor feedback) of Parts A and B. The objective is to present a complete document incorporating all functional and analysis and design details for each iteration of your project.

**Submit to single copy with names to digital dropbox,**

## Part C – Design Specifications Cont’t

Part C includes

1. Mock-up UI
2. ERD model with database schema
3. Skeletal or stub code generated from Class Diagram using Visual Paradigm or VS-studio
4. Component & Deployment diagrams
5. Technology stack for the Software Implementation

In addition to the above you are also required to attach the revised copies of the previous document (corrected version as indicated from instructor feedback) of Parts A and B. The objective is to present a complete document incorporating all functional and analysis and design details for each iteration of your project.

MARKS Breakdown

For Part C (10 points) – Weeks 13-14

|  |  |
| --- | --- |
| Analysis & Design Specifications | |
| Subject | Mark |
| Refinement & Corrections – Part B | 1.0 |
| UI/UX Start with Chapter 8 charts – Slides 25 and 26 ( use cases – See Part A ). Mock-up UI ( use a wire-framing/Storyboards or VS-studio to do this) - include the functional sub-system chart from Chapter 8.-- 4-5 UI views – Include two report/form designs. – at least 8 screen layout objects. | 3.5 |
| ERD and Database Schema | 1.5 |
| Component & Deployment – See notes | 1.0 |
| Skeletal or stub code generated from Class Diagram using Visual Paradigm or VS-studio -- Do not write the program logic | .5 |
| Final Technology tools ( stack) for Software Implementation – complete the list that you began in Part A. | .25 |
| Project Plan -- this is to be completed as per the entire project. | .25 |
|  |  |
|  |  |
| Presentation – | 2.0 |
| **Total** | **10** |

**Package Part A, B & C for Submission with TOC**