1st SIT COURSEWORK 1 QUESTION PAPER **Year Long 2023/2024**

Module Code:	**CS5002NI**
Module Title:	**Software Engineering**
Module Leader:	**Mr. Rubin Thapa (Islington College)**

Coursework Type:	**Groupwork**
Coursework Weight:	This coursework accounts for **20%** of your total module grades.
Submission Date:	**Week 11 (5th January 2024)**
When Coursework is given out:	**Week 06**
Submission Instructions:	Submit the following to Islington College's MySecondTeacher portal before the due date (before 01:00 PM on the due date): ● **Soft copy (Group.pdf file in .pdf format)**
Warning:	London Metropolitan University and Islington College take Plagiarism seriously. Offenders will be dealt with sternly.

PLAGIARISM

You are reminded that there exist regulations concerning plagiarism. Extracts from these regulations are printed overleaf. Please sign below to say that you have read and understand these extracts:

Extracts from University *Regulations on Cheating, Plagiarism and Collusion*

Section 2.3: *"The following broad types of offence can be identified and are provided as indicative examples ….*

(i) Cheating: including taking unauthorized material into an examination; consulting unauthorized material outside the examination hall during the examination; obtaining an unseen examination paper in advance of the examination; copying from another examinee; using an unauthorized calculator during the examination or storing unauthorized material in the memory of a programmable calculator which is taken into the examination; copying coursework.

(ii) Falsifying data in experimental results.

(iii) Personation, where a substitute takes an examination or test on behalf of the candidate. Both candidate and substitute may be guilty of an offence under these Regulations.

(iv) Bribery or attempted bribery of a person thought to have some influence on the candidate's assessment.

(v) Collusion to present joint work as the work solely of one individual.

(vi) Plagiarism, where the work or ideas of another are presented as the candidate's own.

(vii) Other conduct calculated to secure an advantage on assessment.

(viii) Assisting in any of the above.

Some notes on what this means for students:

1. Copying another student's work is an offence, whether from a copy on paper or from a computer file, and in whatever form the intellectual property being copied takes, including text, mathematical notation, and computer programs.

2. Taking extracts from published sources *without attribution* is an offence. To quote ideas, sometimes using extracts, is generally to be encouraged. Quoting ideas is achieved by stating an author's argument and attributing it, perhaps by quoting, immediately in the text, his or her name and year of publication, e.g. “$e = mc^2$ (Einstein 1905)". A *reference* section at the end of your work should then list all such references in alphabetical order of authors' surnames. (There are variations on this referencing system which your tutors may prefer you to use.) If you wish to quote a paragraph or so from published work then indent the quotation on both left and right margins, using an italic font where practicable, and introduce the quotation with an attribution.

1. Introduction

This assignment contributes 20% to the overall mark for this module and involves group work. You are expected to form groups of **5 or 4** students.

2. Objectives

- ✓ To demonstrate practical knowledge of 'Structured Software Engineering' (Yourdon)
- ✓ To work successfully in a small group to a given time scale

3. Specification

McGregor Institute of Botanical Training is Ireland based training institute located at Godawari, Lalitpur. It has been almost 7 years since they have been operating in Nepal. It provides different undergraduate and postgraduate courses specializing in agriculture along with horticulture specializations and is affiliated to Dublin City University. Recently, with the sudden surge in the number of people with interest in the domain of agriculture, they are planning to introduce a range of short-term certification courses related to horticulture for anyone interested.

Apart from the certification courses, they are looking forward to selling different varieties of plants charging a minimal fee and for free in some of the cases. They want to build a community of individuals with interests in plants and want to create a platform(forum) where the plant enthusiasts can discuss their ideas, organize programs to protect rare plants and forests. The forum can also prove to be a platform where people can post their queries to be answered by the experts.

3.1 Detailed Specification

The proposed system is to have following functions

1. **Register in the system.**
   Any new user should be registered in the system to use the features in the system.

2. **Join the program.**

   Anyone interested can join the program .i.e graduate or postgraduate or certificate oriented short courses. Courses are both paid and unpaid.

3. **Purchase plants**

   The provision for users to view varieties of plants and purchase if interested. Plants can be kept in carts and bought in bulk.

4. **Payment**

   There should be a provision for the customer to pay and for the plant purchased and the course they are enrolled in. Data of the payment should be stored.

5. **Ask for recommendations.**
   The provision to ask for recommendations with experts. Users pinpoint their site location in the map, if possible, soil condition images and experts reply with the suitable plants/crops that can be planted in that particular location.

6. **Report preparation**.

   The facility for the admin to prepare a detailed financial report, employees report and report related to every user.

7. **Take certification exams.**

   Users can take mock tests as per their convenience, check results and also give certification exams after fulfilling certain prerequisites.

8. **Forum**

   Users can engage in conversations about plants, sharing their opinions through posts. They can also comment on and upvote others' opinions.

9. **Get Notification**

   All the different users in the system should get relevant notification according to their activity.

4. Your Tasks

Your main tasks are:

1. Prepare a project charter and SRS (Software Requirement Specification). (Note: While preparing charter/SRS, you are free to make logical/sensible assumptions).

2. Specify and design substantial parts of the system using Structured approach (Yourdon).

4.1 Project Charter

- Problem Statement
- Business Case
- Goal Statement
- Timeline
- Scope
- Team Members

4.2 SRS

- **Functional Requirements**
- **Non-Functional Requirements**
  - **Design and Implementation Constraints**
  - **External Interfaces Required**

    (User Interfaces, Hardware Interfaces, Software Interfaces, Communication Interfaces)
  - **Other Non-Functional requirements.**

4.3 Detailed specification of GROUP task

As a group you are asked to produce a number of analysis and design specifications of an overall system.

4.3.1 Environmental model specification

- Context Level, (DFD) Data Flow Diagram (level1, level2(**for any 3 processes**))

4.3.2 Internal model specification for the system.

- Entity Relationship Diagram (ERD)
- Data Dictionary (with definitions of major data flows and definitions of data stores and entities)
- Process specifications (Pspecs) for elementary processes.

4.3.3 Design specification

- Structure chart (upper level) for the whole system.

4.3.4 Assignment Diary

You are asked to produce an Assignment diary to document:

- All the assumptions you made,
- All the omissions/inconsistencies you have discovered in the provided specification.
- Group member responsibilities, group meetings.

4.4 Detailed specification of INDIVIDUAL task

As the individual task you are asked to produce a number of analysis and design specifications of a particular part of the system.

Each group member should select ONE of the following ‘functions’ for their individual task and clearly specify their name and their chosen functions clearly.

1. **Make Payment.**
2. **Purchase Plant.**
3. **Report Preparation.**
4. **Join the program.**
5. **Take Certification Exam**

After selecting a function create the design specifications of the system as mentioned below:

Environmental model specification

- Context Level

Internal model specification for the system

- The Level 1 DFD fragments
- Level 2 DFDs for the particular function

Design specification

- Structure chart for the particular function.
- Module specifications (MSpecs) for corresponding modules
  Please note that a template for MSpecs is given below under Footnotes.

5. Documentation

Each group should produce only ONE integrated copy of the report with the following structure:

Cover page – Coursework title plus names and 8-digit id numbers of all group members

Contents page(s)

1. Introduction (a brief overview of the report)
2. Project Charter
3. SRS
4. Group tasks
    a. Environmental model specification
    b. Internal model specification
    c. Design specification
    d. Assignment diary
5. Individual task
    a. Environmental model specification
    b. Internal model specification
    c. Design specification
6. Summary (a brief summary of the report)
7. Reference

Foot-notes:

1 (Mspec) Component/module specification should have the following format:

MODULE NAME
PURPOSE. A brief description of the module's function
PSEUDOCODE. Detailed description of the module's function
INPUT PARAMETERS (if any)
OUTPUT PARAMETERS (if any)
GLOBAL VARIABLES (if any)
LOCAL VARIABLES (if any)
CALLS. References to other modules/components (including libraries).
CALLED BY. Names of other modules/components using this one.

2. Presentation's viva (Oral presentations by each group and each group member) will decide the date by the 11th week.

3. Plagiarism and / or collusion. Any evidence of plagiarism or collusion between groups and / or with entities outside the university may result in an investigation by the case work office and, if substantiated, one of a range of serious penalties may be applied to the student[s] concerned.

4. Marking Scheme

Group Marks	Marks
Project Charter	**6**
SRS	**10**
Context Diagram	**6**
DFD	**10**
E-R Diagram	**8**
Data Dictionary	**5**
Process Specification	**5**
Structured Chart	**7**
Assignment Diary	**8**

Individual Marks	
Context Diagram	**5**
DFD	**7**
Structure Chart	**6**
Module Specification	**10**
Description	**7**