Assignment 2
Department of Information & communication Technology - Faculty of Technology
Level II – Semester I
ICT2142 – Object Oriented Analysis & Design

Instructions:

Answer questions 1 and 2 and submit a hard copy by **8th of May 2025**.
Under no circumstances will late submissions be accepted.

1. Given below is a description of sending an SMS using a mobile phone. Draw the activity diagram with partitions.

   The user initiates the activity by selecting the menu. The system presents a menu containing various options. Within this menu, the user can choose the "Message" option. Upon selection, the system displays multiple message options, including the "New message" option. Opting for "New message" leads the system to present the compose message screen. Here, the user inputs the recipient's number and the message content. Following this, the user can utilize the option menu to either send or discard the message. Selecting "send" results in the message being sent to the recipient and simultaneously copied to the sent items folder. Subsequently, the system returns to the main screen. Alternatively, selecting the discard message option leads to the system discarding the message and displaying the main screen.

2. Draw a UML Sequence Diagram for the "Register for a Course" use case based on the below scenario. Be sure to represent different types of messages (such as synchronous, asynchronous, and return messages), and appropriately use interaction fragments to capture different flows and repeated behavior.

   At the start of the semester, students use the Smart Course Registration System (SCRS) to enroll in courses. To register for a course, a student must first log into the system. Upon successful authentication, the student searches for a course using keywords. The system retrieves matching course details from the CourseCatalog. After reviewing the results, the student selects a course they wish to register for. The system then checks if the course has prerequisites. If prerequisites exist, it verifies whether the student has completed the required subjects by consulting the AcademicRecordService. Depending on the outcome, the student is either allowed to continue or notified that the prerequisites have not been met. If eligible, the system checks for available seats. If seats are available, the student is registered for the course and a confirmation email is sent via the EmailService. If no seats are available, the student is placed on a waitlist and receives a notification. The student may repeat this process to register for multiple courses during a single session.