



SCHOOL OF ARCHITECTURE, COMPUTING AND ENGINEERING

Submission instructions

- Cover sheet to be attached to the front of the assignment
- Question paper to be attached to assignment
- All pages to be numbered sequentially
- Assignment to be stapled **ONLY ONCE** in the top left-hand corner
- Assignment **NOT** to be placed in a folder, plastic sleeve of any kind or bound in any other form.
- Computer discs to be attached to the work in an envelope or purpose made sleeve adhered to the rear

Module code	SD3049
Module title	Formal Methods in Software Engineering
Module leader	Mr. Sola Lee
Assignment title	Simple LIFT system with VDM
Weighting	50%
Handout date	
Submission date	
Learning outcomes assessed by this assignment	2,4,7



ASSIGNMENT

SD3049 – Formal Methods in Software Engineering

Instructions

This is an individual assignment carrying 50% of the total marks for this module.

Submit your assignment in hard and soft copies. Make sure name and ID is written on the cover sheet.

Format of the report:

1. Font size: 14 point for title/heading, 12 point for contents and 8-9 point for headers/footers
2. Font face: Arial
3. Line spacing: 1.5
4. Proper alignment of your paragraphs, and necessary page set-up.
5. Register as a student and upload this coursework to turnitin.
6. Generate a originality report via Turnitin. (Assignment without a turnitin report will be IGNORED)

Assignment Release Date:

Date of Submission:

Deliverables

The deliverable consists of the following (contribution to the overall module mark is given in brackets below):

Simple LIFT system with VDM (50%) containing

You are required to analyse a scenario and create a simple rich diagram, class diagram and a VDM specification for the given scenario.

Scenario:

Each student must search for a building with least four (4) floors that have one (1) or more lifts. Student must submit a proposal with pictures of the building and lift to the lecturer before carrying out this assignment. The proposal will be assessed based on a first come first serve basis to ensure that each proposal is different.

The proposal must contain the following:

1. The name of the building.
2. A photo of the building and the lift.
3. Indicate how many floors in the building.
4. Indicate how many rooms per floor.
5. Indicate how many people per room.
6. Indicate how many emergency stairs are located in the building.
7. Indicate how many people can fit in the lift.

You are required to submit:

		Weight
a)	Describe a Formal Language normally used in Formal methods.	10%
b)	Study the above scenario and clearly identify all the necessary constraint for a lift system.	5%
c)	Based on the above scenario; create a Rich Picture, a Class Diagram and a VDM Specification.	30%
d)	Documentation – Hard copy as well as an electronic copy saved as a rich text file on any storage medium, which is readable, by the network drives.	5%
	Total	50%

PLAGIARISM

1. Students should read carefully the notice on plagiarism placed on the student's notice board.
2. Any use of materials from other sources/author should be clearly indicated and references must be given in the text.
3. Students are also required to complete the form re: Plagiarism, which is available at Level 4 Student Service Counter.

MARKING CRITERIA

MODULE CODE: SD3049

MODULE TITLE: FORMAL METHODS IN SOFTWARE ENGINEERING

EXAM BAND: SEMESTER C

COURSEWORK – Marks Breakdown:

		Weight	Total
a)	Discuss Formal methods. Discuss Formal Language. Demonstrate how formal language is used in the formal methods.	3% 3% 4%	10%
b)	Identify all the necessary constraint for a lift system. There are at least five (5) constraints concerning the lift movement, the lift door and safety.	5%	
c)	Study the above scenario. You are required to:** Create a Rich Picture that includes: - a lift - a building, a rooms and a stairway	4% 2% each	10%
d)	Create a Class Diagram that includes: ** - a lift with all its members - a room, building and stairway with all their members	4% 2% each	10%
e)	Create a VDM that includes: - a lift with all the states and methods - a room, building and stairway with all their states and methods	4% 2% each	10%
f)	Documentation – Hard copy as well as an electronic copy saved as a rich text file on any storage medium, which is readable, by the network drives.	5%	
	Total	50%	

** Give 0 marks if it is not related to the previous stage.