SCHOOL OF COMPUTER SCIENCE & INFORMATICS
COURSEWORK ASSESSMENT PROFORMA

MODULE: CM1202 Developing Quality Software

DATE SET: Friday 3rd February (Week 2)

SUBMISSION DATE: Tuesday 28th February 2017 (Week 6), (Opportunity to hand- in draft, *printed copy*, of Task 1, at the end of the tutorial sessions on Friday 10th Feb and get feedback on Friday 17th Feb).

SUBMISSION ARRANGEMENTS:

A nominated team member should submit your coursework, electronically as a single pdf document, via Learning Central by 17:00 on Tuesday 28th February. (Use your team number as part of the name of the file). If you have any difficulties submitting via Learning Central you MUST e-mail the module leader **Helen Phillips** (Helen@cs.cardiff.ac.uk) at least half an hour before the deadline time.

TITLE: Coursework 1 Part B, Design Model

This coursework is worth 15% of the total marks available for this module. The penalty for late or non-submission is an award of zero marks. You are reminded of the need to comply with Cardiff University's Student Guide to Academic Integrity. Your work should be submitted using the official Coursework Submission Cover sheet.

LEARNING OUTCOMES ADDRESSED:

- Understand the importance of basic Software Engineering concepts, principles and practices.
- Gain an appreciation of how main stages in the software development lifecycle contribute to the development of a high-quality software system by performing key technical tasks from each stage of the project
- Design a system using appropriate UML models to demonstrate how the main requirements can be delivered

Instructions

Your team needs to develop a **design model**. It is essential that the design model covers ALL the major functional requirements for the scenario 'Personal Tutor Management system for COMSC'. These requirements should be equivalent to those identified in Coursework 1 Part A.

Task 1 (50%) (*You have an opportunity to hand- in draft, printed copy of this task (Task 1) at the end of the tutorial session on Friday 10th Feb and get feedback by Friday 17th Feb*).

Develop a Use Case model (diagram and specifications, as explained below) to capture the major functional requirements of the ` Personal Tutor Management system for COMSC'

a. Include in the use case diagram any possible relationships between the use cases (namely*, include, extend* and *generalise*).

b. For each use case identified, write a brief description of the use case and create a step-by-step outline of the basic flow of events. (It is expected that every member of the group will write ONE use case each).

c. Teams of **Four or less**: produce a detailed specification for ONE use case related to the task of assigning new students to tutors.
Teams of **Five or above**: produce a detailed specification for TWO use cases, one associated with the task of assigning new students to tutors and one associated to the task of displaying the list of tutees for a particular personal tutor.

For each detailed specification:

i. Expand the outline description of the basic flow to produce a detailed specification of the basic flow.

ii. Identify possible alternative flows and for each, provide a description of their flow of events.

iii. State any Preconditions and Postconditions for the use case.

Task 2 (50%)

Develop a UML Class diagram for your system.

a. The diagrams will include the classes and (possibly different types of) relationships between classes to capture the structure of the proposed system.

b. For each class include representative attributes and methods.

c. Describe how your class diagram will support ALL the major system functional requirements, as captured in the use cases you identified above. This description should be a maximum of two pages.

Deliverables:

You need to document your answer for both tasks in a report.
For each use case described, include the name of the member(s) of the team that have contributed to that particular section (this will be used to monitor individual student's engagement with the team).

CRITERIA FOR ASSESSMENT: Credit will be awarded against the following criteria.

Criteria for Assessment:
Task 1 carries 50% and Task 2 carries 50% of this coursework mark.

Task 1

Your Use Case model will be evaluated for:

- Actors identified (clear name, unique role in the system, each actor involved with at least one use case)
- Structural relationships identified and justified (include, extend and generalise)
- Use cases identified (unique intuitive name, justified behaviour that maps to functional requirements)
- Use case outline of basic flow (appears complete and achieves an observable result)

Your Use case specification will be evaluated for:

- Consistent style (standard template) used
- Actor interactions and exchanged information is clear
- How and when the flow of events starts and ends is clear
- The basic flow achieves an observable result for one or more actors
- Alternative flows identified, justified and described clearly
- Pre- and post- conditions are clearly described

Task 2

Your Class Diagram will be evaluated for:

Classes:

- Clear and concise class names
- Provided appropriate attributes for classes
- Provided appropriate operations/methods for classes

Relationships:

- Appropriate use of different types of class relationships (associations, aggregation, composition and generalisation)
- Multiplicity of relationships clearly marked (e.g. 1..*)

Coverage: Class diagram appears to sufficiently support the major requirements in Use Cases