THE UNIVERSITY OF THE WEST INDIES

Semester I ■ Semester II ☐ Supplemental/Summer School ☐

Examinations of December ■ /April/May ☐ /July ☐ 2012

Originating Campus: **Cave Hill** ☐ **Mona** ■ **St. Augustine** ☐

Mode: **On Campus** ■ **By Distance** ☐

Course Code and Title: **COMP 2140 Introduction to Software Engineering**

Date: **Monday, December 10, 2012** Time: **9:00 AM – 12:00 noon**

Duration: **2 Hours.** **Paper No:**

Materials required:

Answer booklet: Normal ■ **Special** ☐ **Not required** ☐

Calculator: *(where applicable)* **Programmable** ☐ **Non Programmable** ☐

Multiple Choice answer sheets: numerical ☐ alphabetical ☐ **1-20** ☐ **1-100** ☐

Auxiliary/Other material(s) – Please specify:

Candidates are permitted to bring the following items to their desks:

Instructions to Candidates: This paper has 3 pages & 4 questions.

Candidates are reminded that the examiners shall take into account the proper use of the English Language in determining the mark for each response.

Do Question 1 and Any Other Two

Question 1 ***General Question [30 marks] [Compulsory Question]***

a) *Software Engineering Ethics*: With particular reference to the IEEE/ACM Software Engineering Code of Ethics and Professional Practice or to any other such code of ethics and professional practice defend the of the key issues raised.**[7 marks]**

b) *Software Processes*:
   i. State the key differences between a named plan-driven approach and an agile approach to software development. **[3 marks]**
   ii. With each stated difference above discuss why the agile approach is better/worse. **[4 marks]**

c) *Requirements*: You have been asked to put together a team to find out and document the requirements for a large software system. What skill sets would you be looking for? Explain. **[3 marks]**

d) *System Modelling:* What are the most widely used UML diagrams and what is the purpose of each. **[3 marks]**

e) *Project Management*: Project management involves several activities such as risk management. What are the other possible activities? What does risk management entail? **[5 marks]**

f) Configuration Management:
   i. Explain briefly the difference (if any) between a software version and a release. **[2 marks]**
   ii. State what role a repository plays in software configuration management and briefly explain two operations that a user can perform with repository objects. **[3 marks]**

Question 2 ***Requirements [15 marks]***

Refer to the project that you did for your coursework.

a) List five functional and two non-functional requirements for the system. **[5 marks]**

b) Draw a UML diagram showing the functional requirements for the same system. **[3 marks]**

c) Briefly describe a recommended process for gathering requirements.**[3 marks]**

d) Give a recommended format for a complete and exhaustive requirements document. **[4 marks]**

Question 3 ***System Modelling [15 marks]***

a) Draw a labeled diagram representing the layered architecture. What are the important characteristics of this architecture? **[8 marks]**

b) Compare the layered architecture to another architecture of your choice. Give two examples showing the suitability of using the two architectures. **[7 marks]**

Question 4 ***Testing [15 marks]***

a) Distinguish between verification and validation. [**3 marks**]

b) Give a brief statement of what each of the following involves, say at what stage(s) of the software lifecycle each is used, and who is involved in each case.

i. Unit testing [**3 marks**]

ii. User Acceptance testing [**3 marks**]

iii. Release testing [**3 marks**]

c) Explain briefly what is meant by the term regression testing. [**3 marks**]

*****END OF QUESTION PAPER*****