**Software Engineering – C188**

**Course Overview**

This course introduces the concepts of software engineering to students who have completed the core courses in programming and project management. The principles build on previously acquired concepts, switching the emphasis from programming simple routines, to engineering robust and scalable software solutions. This course does not cover programming, but provides an overview of software engineering processes, and their challenging nature focusing on the need for a disciplined approach to software engineering. A generic process framework provides the groundwork for formal process models. Prescriptive process models such as the Waterfall Model and Agile Development are included. An introduction to the elements and phases of software engineering is included which explores requirements engineering, design concepts, and software quality.

**Objective Assessment Task Overview**

**COMPETENCIES**

**4020.4.1** : **Introduction to Software Engineering**

The graduate applies software engineering core principles, the generic process framework, and introductory software engineering concepts to a software project.

**4020.4.2** : **Software Engineering and Process Models**

The graduate recommends a software engineering process model for a project.

**4020.4.3** : **Requirements Engineering**

The graduate interprets requirements refined through the software engineering process.

**4020.4.4** : **Software Design Concepts, Including Architecture**

The graduate designs requirements-based software solutions using software engineering design concepts and patterns.

**4020.4.5** : **Quality Concepts, Software Quality Assurance, and Software Testing**

The graduate integrates software quality testing and assurance throughout the software development process.

**INTRODUCTION**

In this assessment, you will review a requirements document and then propose a software solution. Your submission will showcase what you’ve learned in the course through the creation of a design and test plan, which is a deliverable for the waterfall methodology. Review the scenario, requirements, and rubric below for additional guidance as you complete this assessment.

**SCENARIO**

You are a member of a software development team for a project, which includes business analysts, solution analysts, developers, quality assurance professionals, and a project manager, among other team members. You have been tasked with completing a solution proposal and design and test plan with the help of your team to support the software development process. The American Video Game Company has provided a high-level requirements document to aid you in identifying an appropriate solution.

The project is to implement a customer relationship management (CRM) system for the sales force of a medium-sized company. The initial requirements document has been provided for you to use in determining a solution. You may choose to implement a customizable/commercial off-the-shelf (COTS) system, or you may decide to have the system custom built. When making this decision, ensure all requirements are considered and can be implemented if choosing a COTS system. If you decide to build the system, consider the additional resources that will be needed. Review the attached “CRM Requirements” document provided with the assessment to gain an overall understanding of the system the American Video Game Company is looking for.

**REQUIREMENTS**

*Your submission must be your original work. No more than a combined total of 30% of the submission and no more than a 10% match to any one individual source can be directly quoted or closely paraphrased from sources, even if cited correctly. An originality report is provided when you submit your task that can be used as a guide.*

*You must use the rubric to direct the creation of your submission because it provides detailed criteria that will be used to evaluate your work. Each requirement below may be evaluated by more than one rubric aspect. The rubric aspect titles may contain hyperlinks to relevant portions of the course.*

Review the attached “CRM Requirements” to gain an overall understanding of the system that American Video Game Company is looking for. Then propose a software solution for American Video Game Company by doing the following:

A.  Introduce your proposed system, including a purpose statement, overview of the problem, goals and objectives for the project and solution, prerequisites, scope, and environment, as outlined in the attached “Design Template.”

*Note: The Introduction section of this report may be done after the project task is completed.*

B.  Explain how your software solution addresses **five** distinct requirements from the attached “CRM Requirements.”

C.  Discuss the waterfall method by doing the following:

1.  Compare the advantages and disadvantages of the waterfall method to those of another development method of your choice.

2.  Evaluate whether the waterfall method or the development method you chose in C1 is better suited to the solution for American Video Game Company, including specific examples to justify your claims.

D.  Create **two** visual representations of your software solution (e.g., storyboard, flowchart, UML diagram, ERD) that illustrate how the system process or workflow aligns with and supports the business process for American Video Game Company.

E.  Create a test plan with test cases for **three** different functional aspects of your software solution, including the following:

•   preconditions for *each*  test case

•   steps for *each*  test case

•   expected results for *each* test case

F.  Acknowledge sources, using in-text citations and references, for content that is quoted, paraphrased, or summarized.

G.  Demonstrate professional communication in the content and presentation of your submission.

**File Restrictions**

File name may contain only letters, numbers, spaces, and these symbols: ! - \_ . \* ' ( )  
File size limit: 200 MB  
File types allowed: doc, docx, rtf, xls, xlsx, ppt, pptx, odt, pdf, txt, qt, mov, mpg, avi, mp3, wav, mp4, wma, flv, asf, mpeg, wmv, m4v, svg, tif, tiff, jpeg, jpg, gif, png, zip, rar, tar, 7z