**ASIA PACIFIC UNIVERSITY**

**CT046-3-2 SDM – SYSTEM DEVELOPMENT METHODS - APU DEGREE – LEVEL 2**

**COURSEWORK**

PLEASE CONSIDER THE ENVIRONMENT AND DO NOT PRINT THIS DOCUMENT UNNECESSARILY.   
QUICK TIPS; CONVERT TO SLIDE FOR DISCUSSION or PRESENTATION, DISTRIBUTE SOFT-COPY ONLY, PRINT DRAFT, PRINT CONTENTS ONLY, PRINT DOUBLE-SIDE, PRINT 2IN1, USE RE-CYCLED PAPERS ONLY. THANK YOU.

**LEARNING OUTCOMES:**

* Explain the purpose, structure and scope of modern Information System Development Methodologies and select and justify appropriate methods of analysis, design and implementation for a particular component or application, be it traditional, multimedia or web based.
* Analyze and design different views of a system using tools and techniques.
* Apply UML analysis, design and implementation techniques to develop a simple prototype, with a suitable interface, from conception through to implementation.
* Demonstrate a knowledge of the fundamental issues of prototyping by applying standard design principles.

**CASE STUDY:**

***ProTect*** *is a new software-house which is planning to developed software for corporate clients. The company has three core departments handling Mobile Applications, Games and Web Application projects respectively. Each department employ developers with specific skills and all three are governed by a central management team. On any given day, each department could handle several projects from various clients. In some cases, a client may need a system consisting several applications (such as both web and mobile) which would require the departments to collaborate their projects.*

**TASK:**

***You are a software development consultant, hired to advice ProTect on efficient development approaches for their project.*** *You should work with a group of* ***3 or 4*** *members. Part-A (70%) is a ‘Group Component’, to be completed in a collaborative manner. Part-B (30%) is an ‘Individual Component’, to be completed by each member of the group respectively.*

**PART-A – GROUP COMPONENT (70%)**

# Project Planning

* 1. **Introduction** - This should include a brief introduction of the company, it’s customers and its current **business process**.
  2. **Functional Units -** Briefly explain the types of **projects** and **products** which would be handled by each department. Write a few statements of **scopes** and **objectives** for each department.

1. **Agile Principles and IS Methodologies**
   1. **Agile Principles** - As the initial stage, your team has decided that Agile Methods could be beneficial to be applied to all three departments. How would you make your project more Agile? Outline a few Agile Principles that you would implement to make your projects more agile. Explain the strategies that you would take to implement them.
   2. **Methodologies – Compare and contrast** the types of methodologies which you would recommend for each department. Compare the features of these methodologies so distinctive advantages are seen for their applications into each department or product. You may present a summary table of your comparison. (Your answer should include at least one method form Structured and Object Oriented based Methodology).
   3. Proceed to Section 7.1 (individual Component)
2. **System Analysis -** Assume that you have collected ample information for your project during ‘Requirement Elicitation’ stage. Describe the methods that you would use to compile, analyze and present data gathered from your investigations. Justify your sections. (You may focus on just one department / product).
3. **System Design** - Design often comprises the modeling of the system. Present a list of the most suitable modeling techniques that you would adopt for each project / product, relevant to your recommended Methodologies. Justify your selections.
4. **Implementation and Deployment**
   1. **Construction** – list and explain the factions and purpose of the major software (and tools) that you would consider in the contraction of the new system.
   2. **Testing** - Suggest a few Testing Methods suitable for your system.
   3. **System Deployment** - Suggest the type of ‘system change over method(s)’ that you would suggest for the products in your projects. Briefly explain how and why these methods are carried out.

**PART-B – INDIVIDUAL COMPONENT (30%)**

*This part involves individual (member) contribution to this assignment. The whole discussion should not exceed 1000 words.*

# Selection of Methodology - From your above comparison, choose a methodology (for one department) and explain in detail how your project will be developed according to the methodology stages. Include any frameworks and/or diagrams as aid. *(Group members are encouraged to select different methodology/department from each other).*

1. **Project Scheduling** - Create a simple project schedule (such as a Gantt Chart, PERT Chart, etc.) according to the methodology that you have suggested in 2.1.Clearly show the tasks (and sub-tasks), predecessor (parallel, sequential, iterative, if any) recommended for the project.

# Project Presentation

# Present your solution and suggestion including explanation of each section of your topics.

# A detailed presentation of your individual component.

**ASSIGNMENT DELIVERABLES AND CONDITIONS:**

* Final Documentation has to be word processed, printed in A4 size paper (double sided preferred) and professionally bound. The maximum of 5000 words is recommended.
* Clearly separate and indicate the Group component, followed by Individual component in your documentation. Individual components need to be included with Student’s Name and TP.Number.
* Include a ‘Workload Matrix’, indicating the contribution of each individual for each required component (shown in percentage) and should be signed off by each team member, attached to the APPENDIX part of the final document.
* **Please consider the environment and don't print unnecessarily.** Include all your work (copy) into an optical disk, to be attached to the documentation. This could be used to scan for plagiarism. Any additional / redundant materials that you wish to attach could also be included into the optical disk.
* Citation of facts is mandatory. Obtain your facts from credible sources into references / bibliography. Avoid ‘dumping of data’. Instead the facts that you discuss should be made relevant to your case/project.
* It is acceptable for discrete activities of this assignment to be undertaken by individual group members. However, it is essential that all group members understand the presentation in its entirety. At the end of the demonstration your group will be asked a series of questions to explore your understanding and analysis of the given problem.
* The presentation will be conducted according to the date & time allocated to each group. Late submissions will not be assessed unless extenuating circumstances are upheld.

**Marking Criteria**

*The coursework will be marked based on the following area:*

|  |  |
| --- | --- |
| **Chapters** | **Marks Allocated** |
|
| Project Planning  * 1. Introduction   2. Functional Unit | 5  5 |
|
| 1. Agile Principles and IS Methodologies    1. Agile Principles    2. IS Methodologies | 10  15 |
|
| 1. System Analysis | 5 |
|
| 1. System Design | 10 |
|
| 1. Implementation and Deployment    1. Construction    2. Testing    3. System Deployment | 5  5  5 |
| Overall Documentation | 5 |
| (Individual Component)   1. Selection of Methodology 2. Project Scheduling | 15  5 |
| 1. Project Presentation  (Group and Individual Component) | 10 |

# Performance Criteria

## Distinction (70% and above)

This grade will be assigned to work where the documentation is complete and describes in detail, with little or no errors, the following components: introduction, feasibility study, usage of SDLC, selection and application of investigation techniques and analysis / logical design in accordance with excellent documentation standards. To obtain this grade, the candidate’s individual assignment should show all techniques of process applied with little or no errors. All deliverables of the individual component should be coherent with detailed description to explain the diagrams. Overall documentation standards for both the group project as well as the individual assignment should be of excellent quality. In order to obtain a grade at this level, individuals should be able to address all issues with regards to not only their own component of the module but also be those of the other group members. Individual’s contribution to the project, at this level should be more than 75% and overall peer evaluation should indicate excellent standards.

## Credit (56% – 69%)

This grade will be assigned to work where the documentation is complete and describes briefly, with some errors, the following components: introduction, feasibility study, selection and application of investigation techniques and analysis / logical design in accordance with good documentation standards. To obtain this grade, the candidate’s individual assignment should show all techniques of methodology applied but some errors. All deliverables of the individual component should be coherent with detailed description to explain the diagrams. Overall documentation standards for both the group project as well as the individual assignment should be of excellent quality. In order to obtain a grade at this level, individuals should be able to address most issues with regards to not only their own component of the module but also be those of the other group members. Individual’s contribution to the project, at this level should be more than 65% and overall peer evaluation should indicate excellent standards.

## Pass (40% - 55%)

This grade will be assigned to work where, most of the basic requirements of the documentation listed above, such as introduction, feasibility reports, logical process models, data dictionary are of adequate standard which is evident in the hardcopy of the documentation. The physical design of the system in terms of the interactive screen design and report maps adequately against the logical design presented in the documentation. The documentation should be of adequate standard in terms of language, layout and flow. Some accurate, relevant and up-to-date referencing was visible. Group presentation of the team should have adequate visual aids with relevant information presented and adequate coordination among group members. Individuals should display an adequate level of professionalism and project knowledge. Peer-to-peer evaluation of individual’s contribution should be adequate.

## Fail (Below 40%)

This grade will be assigned to work where, most of the basic requirements of the documentation listed above, such as introduction, feasibility reports, logical process models, data dictionary are of poor standard which is evident in the hardcopy of the documentation. The physical design of the system in terms of the interactive screen design and report shows little or no mapping / linking with the logical design presented in the documentation. The documentation is of poor standard in terms of language, layout and flow. Minimal or no referencing was done. Group presentation of the team has poor visual aids with irrelevant information presented and poor coordination among group members. Individuals display on the average a poor level of professionalism and project knowledge. Peer-to-peer evaluation of individual’s contribution is poor.

End.