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|--------------------------|--------------------------------------|-----|
| <b>MODULE</b>            | <b>SYSTEMS ANALYSIS &amp; DESIGN</b> |     |
| <b>CODE</b>              | BSCH-1-2-09                          |     |
| <b>STAGE</b>             | I                                    |     |
| <b>NUMBER OF CREDITS</b> | 4 semester credits / 6 quarter units |     |
| <b>STATUS</b>            | CORE                                 |     |
| <b>THEME</b>             | Business Solutions & Design          |     |
| <b>ASSESSMENT</b>        | Continuous Assessment                | 40% |
|                          | Examination                          | 60% |

### **Aims**

This module aims to provide students with an appreciation of how component tasks of computing such as analysis, designing and implementation can benefit from and contribute to an understanding of business solutions.

### **Learning Outcomes**

On completion of this module students will be able to:

- Define and compare the different software development lifecycle models.
- Discuss the evolution of information systems with reference to their capabilities and future potential.
- Explain the technique used during systems development management and planning.
- Describe and use the techniques involved in the structured analysis of problem domains.
- Demonstrate an ability to prepare a project plan for a software project, which includes estimates of size and cost, schedule, resource allocation and project management specifications.

### **Indicative Content**

| <b>Topic</b>                | <b>Description</b>   |
|-----------------------------|--|
| <b>System Concepts</b>      | Computer-Based System Elements : HW, SW, people;<br>System Boundaries;<br>Information and Data;<br>Information System Types. |
| <b>Overview of software</b> | Software engineering paradigms - classic life cycle,   |

|                                       |   |
|---------------------------------------|---|
| <b>process</b>                        | prototyping, spiral model;<br>Project management and planning   |
| <b>SSADM Stages</b>                   | Structured Systems Analysis and Design Methodology<br>Life Cycle Model<br>Phases, Stages, Steps   |
| <b>Feasibility Analysis</b>           | Economic, organisational, technical and scheduling feasibility;<br>Definition of project scope<br>Feasibility Study report, terms of reference  |
| <b>Requirements analysis</b>          | Problem definition; communication techniques; requirements elicitation; fact-finding techniques   |
| <b>Structured Analysis Techniques</b> | Process modelling techniques - Data Flow Diagrams, Structured English, Tight English;<br>Logic modelling techniques - Decision Tables, Decision Trees;<br>Data modelling techniques – ERD's, Normalisation, Data Dictionary |

### Teaching and Learning Methods

This module will be taught using a combination of lectures, tutorials, written assignments and case studies requiring teamwork.

### Assessment Methods

Assessment will use both a continuous component and an end of semester examination. The continuous assessment component will be based on student's assimilation of the concepts underpinning the Systems Development Life Cycle and their ability to apply their knowledge to real life business situations.

### Primary Reading

| <b>Title</b>  | <b>Author</b>                 | <b>Publisher</b>    |
|---|-------------------------------|---------------------|
| The Information Systems Development Life Cycle: A First Course in Information systems | Avison, David<br>Shah, Hanifa | McGraw Hill<br>1997 |

### Recommended Reading

| <b>Title</b>  | <b>Author</b>                      | <b>Publisher</b>      |
|---|------------------------------------|-----------------------|
| Systems Analysis and Design (4th edition)                                 | Kendall, Kenneth<br>Kendall, Julie | Prentice Hall<br>2001 |
| Software Engineering: A Practitioner's Approach (5 <sup>th</sup> edition) | Pressman Roger S                   | McGraw Hill<br>2000   |