Title: System Analysis and Design
Abbreviation and Number: CISB335
AB Paper No.: 13-126
School: Business
Department: Computer Information Systems

Credits: 3
Course Sequence: ( X ) Fall ( ) Spring ( ) Fall and Spring
Hours Per Week: ( 3 ) Lecture ( ) Seminar ( ) Laboratory ( ) Studio ( ) Kitchen
( ) Other (Specify)

Pre-requisite(s): CISB210 and third year standing
Co-requisite(s): None

COURSE DESCRIPTION
This course covers the analysis and design concepts of systems development within an organization. Students use systematic approaches to identify and document requirements. They also utilise techniques for translating requirements into computer-based design specifications, data and process modeling, structured module design, quality assurance checks and testing procedures.

SPECIFIC OBJECTIVES
Upon successful completion of this course, students will be able to
1) gather requirements for a system;
2) elicit and document problem requirements;
3) identify and use data and process modeling techniques;
4) analyze various systems for suitability within organizations;
5) apply theoretical knowledge of the System Development Life Cycle (SDLC) to problem solving in organizations;
6) translate requirements into software design;
7) design a computerised information system using appropriate software; and
8) determine and apply software testing techniques.

COURSE CONTENT
I. System Development Approaches
   A. Role of a System Analyst
   B. System Development Life Cycle (SDLC)
   C. Methodologies
      i. Models
      ii. Tools
      iii. Techniques
   D. Approaches
      i. Traditional
      ii. Object-oriented
      iii. Agile
      iv. Aspect -oriented

II. Project Management
A. Initiation and planning
B. Creation of the project schedule
C. Project feasibility
D. Assignment of staffing and commencement of project

III. Analysis of System Development
A. Compilation of information
B. Prioritization of requirements
C. Prototype and feasibilities
D. Evaluation of alternatives

IV. Modeling
A. Types
B. System requirements
C. Events and relationships
D. Entity-relationship and class diagrams

V. Traditional Approach
A. Data Flow Diagrams (DFD)
B. Information engineering models

VI. Object-Oriented Approach
A. Unified Modeling Language (UML)
B. Requirements, interaction and behaviour
C. Class, Use Case, Sequence, Collaboration and State Charts

VII. Agile Oriented
A. Small team development
B. High stakeholder involvement
C. Quick schedule releases
D. Feedback
E. Refactoring

VIII. Aspect-Oriented
A. Concerns
B. Implementation

IX. Databases Design
A. Types
   i. Relational
   ii. Object-Oriented
   iii. Hybrid
   iv. Distributed
B. Database management systems (DBMS)
X. User Interface Design
   A. Identification and classification of inputs and outputs
   B. Physical and conceptual
   C. Guidelines and documentation
   D. Windows and browser forms

XI. System Interface Design
    Controls
       i. Inputs
       ii. Outputs
       iii. Integrity
       iv. Security controls

XII. System Development Strategies
    A. Outsourcing
    B. In-house development
    C. Software acquisition process
    D. Prototyping
    E. Future trends

XIII. Software
    A. Selection
    B. Packaged
    C. Enterprise Resource Planning (ERP)
    D. Custom built
    E. Implementation

XIV. Quality Assurance
    A. Data conversion and installation
    B. System operability and capability
    C. Testing
    D. Documentation, training and user support
    E. Maintenance, review and enhancements

ASSESSMENT
Tests 20%
Case Studies - Analysis/Simulations 25%
Project 25%
Final Examination 30%
Total ...................................................... 100%
REQUIRED TEXT

SUPPLEMENTARY READINGS/MATERIALS

JOURNALS
Journal of Systems Management
ACM Transactions on Information Systems (ACM TOIS)

WEBSITES
www.apptius.com/system_analysis.aspx
www.freetutes.com/systemanalysis
www.pearsonhighered.com/.../product/Systems-Analysis-and-Design-7E/