Course Title: System Analysis and Design (3 Cr.)
Course Code: CACS203
Year/Semester: II/III
Class Load: 4 Hrs. / Week (Theory: 3 Hrs, Tutorial: 1 Hr.)

Course Description
This course mainly focuses on different aspects of system analysis and design such as foundation, planning, analysis, design, implementation, and maintenance.

Course Objectives
The general objective of this course is to provide concepts related to information systems development in a systematic approach including foundations, planning, analysis, design, implementation, and maintenance.

Course Contents
Unit 1 System Development Fundamentals 9 Hrs.
   a. The Systems Development Environment
   b. The Origins of Software
      Introduction, System Acquisition, Reuse
   c. Managing the Information Systems Project
      Introduction, Managing Information Systems Project, Representing and Scheduling Project Plans, Using Project Management Software

Unit 2 Planning 7 Hrs.
   a. System Development Projects: Identification and Selection
      Introduction, Identifying and Selecting Systems Development Projects, Corporate and Information Systems Planning
   b. System Development Projects: Initiation and Planning

Unit 3 Analysis 13 Hrs.
   a. System Requirements
      Introduction, Performing Requirements Determination, Traditional Methods for Determining Requirements, Contemporary Methods for Determining System Requirements, Radical Methods for Determining System Requirements,
Requirements Management Tools, Requirements Determination Using Agile Methodologies

b. System Process Requirements

c. System Data Requirements
Introduction, Conceptual Data Modeling, Gathering Information for Conceptual Data Modeling, Introduction to E-R Modeling, Conceptual Data Modeling and the E-R Model, Representing Super-types and Sub-types, Business Rules, Role of Packaged Conceptual Data Models – Database Patterns

Unit 4 Design

a. Designing Databases
Introduction, Database Design, Relational Database Model, Normalization, Transforming E-R Diagrams into Relations, Merging Relations, Physical File and Database Design, Designing Fields, Designing Physical Tables

b. Designing Forms and Reports
Introduction, Designing Forms and Reports, Formatting Forms and Reports, Assessing Usability

c. Designing Interfaces and Dialogues
Introduction, Designing Interfaces and Dialogues, Interaction Methods and Devices, Designing Interfaces and Dialogues in Graphical Environments

Unit 5 Implementation and Maintenance

a. System Implementation
Introduction, System Implementation, Software Application Testing, Installation, Documenting the System, Training and Supporting Users, Organizational Issues in Systems Implementation

b. System Maintenance
Introduction, Maintaining Information Systems, Conducting Systems Maintenance

Teaching Methods
The general teaching pedagogy includes class lectures, group discussions, case studies, guest lectures, research work, project work, assignments (theoretical and practical), and examinations (written and verbal), depending upon the nature of the topics. The teaching faculty will determine the choice of teaching pedagogy as per the need of the topics.
Evaluation

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Text Book

Reference Book