ACS 1803
Midterm Topic Outline

I.   Management Information Systems
    a. Introduction to MIS (Lecture Outline 1)
        i.   Data
        ii. The Value of Information Systems
        iii. Input-Processing-Output-Feedback
        iv. Management Information Systems
            1. Hardware
            2. Software
            3. Database
            4. Telecommunications
            5. People
            6. Process

II.   Databases
    a. Data Management (Lecture Outline 2.1)
        i.   The Hierarchy of Data
            1. Bit
            2. Byte
            3. Character
            4. Field
            5. Record
            6. File
            7. Database
        ii. Entities, attributes and Keys
            1. Entities
            2. Attributes
            3. Keys
        iii. Database Administrator (DBA)
        iv. The Enterprise Database Approach
            1. Database Approach
            2. Program Database vs Enterprise Database
            3. Advantages of the Database Approach
            4. Disadvantages of the Database Approach
            5. Database Design
                a. Data Model
                b. Types of database associations
                c. Entity Relationship Diagram (ERD)
                d. Types of Keys
                    i.   Primary key
                    ii. Compound Primary key
                    iii. Secondary key

      iv. Foreign Key
     e. The relational model
     f. Database Normalization

 b. File Processing (Lecture Outline 2.1.2)
    i. Types of File Organization
      1. Sequential
      2. Indexed Sequential
      3. Direct /Random Access

 c. Data Modelling and Database Characteristics (Lecture Outline 2.2)
    i. REA Model
    ii. Database Schema
    iii. Database Management System
      1. Levels of a DBMS
      2. Parts of a DBMS
        a. Data Dictionary
        b. Query
        c. Reports

 d. Implementing the Concepts - Database Implementation
    i. Data Requirements Analysis
    ii. Setting up data on a table
    iii. Normalizing a database
      1. Identifying keys
    iv. Establishing relationships
      1. Foreign Keys
    v. Two forms of Database output (Report vs. Query)

 e. Using MS Access as a DBMS
    i. Main features of MS Access
    ii. Advantages of Using MS Access for DB Implementation
    iii. Disadvantages of Using Access

 f. Data Warehouse, Data mart, Data Mining
    i. Data Warehouse
    ii. Data Mart
    iii. Data Mining
      1. Data mining Applications
        a. Branding and product positioning
        b. Customer Churn
        c. Direct Marketing
        d. Fraud Detection
        e. Market Segmentation
        f. Trend Analysis

III. Information Systems Frameworks (Lecture Outline 3)
  a. The Nature of managerial Work
    i. Planning
      1. Scheduling
      2. Budgeting
      3. Resource Allocation
    ii. Control
      1. Management by Exception
    iii. Organizational Management Pyramid
      1. Operational
      2. Tactical
      3. Strategic
  b. Information Systems Frameworks
    i. Levels of the Organization
      1. Operational
      2. Managerial
      3. Executive
    ii. Basic Systems Architecture Model
    iii. Levels of Information Systems
      1. Operational Systems (Transaction processing Systems)
      2. Tactical Systems (Management Information Systems)
        a. Types of Reports
          i. Exception Reports
          ii. Summary Reports
          iii. Ad-hoc Reports
          iv. Drill-down Reports
      3. Strategic Systems (Executive Information Systems)

IV. Functional Area Information Systems
  a. Functional Areas in the Organization (Lecture Outline 4.1)
  b. Baseline Accounting and Business Transactions Cycles (Lecture Outline 4.1)
    i. Building a Process Map
    ii. Building a Data Flow Diagram
    iii. Business Process Modelling Notation
      1. Example – Create Invoices
      2. Example – Receive Customer Payments
      3. Example – Make Deposit
      4. Example – Create Purchase Order
      5. Example – Receive Items
      6. Example Enter Items
      7. Example – Pay Bills

    c. Accounting Information Systems (Lecture Outline 4.2)
- i. Basic Accounting Terminology/ Accounting Information System (AIS)
    1. Types of accounts
    2. Balance Sheet
    3. Income Statement
    4. Journalizing

    d. Financial Information Systems (Lecture Outline 4.2)
- i. Budgeting Systems
- ii. Cash Management Systems
- iii. Capital Management Systems
- iv. Investment Management Systems

V.   Functional Area Information Systems

    a. Human Resources Information Systems (Lecture Outline 5)
- i. Employee Information System
- ii. Attendance Recording Systems
- iii. Employee Scheduling Systems
- iv. Performance Management Systems
- v. Position Control Systems
- vi. Recruiting Systems
- vii. Compensation and Benefits Systems
- viii. Long Term Workforce Planning Systems
- ix. Labour Negotiation Support Systems

    b. Marketing Information Systems (Lecture Outline 5)
- i. Contact Management Systems
- ii. Telemarketing Systems
- iii. Direct Mail Advertising Systems
- iv. Delivery Tracking and Routing Systems
- v. Sales Management/ Forecasting Systems
- vi. Market Research Systems
- vii. Customer relationship Management Systems (CRM)

    c. Production/ Operations Systems (Lecture Outline 5)
- i. Manufacturing Resource Planning (MRP) Systems
    1. Bill of Materials (BoM)
    2. Capacity Requirements Planning (CRP)
    3. Production Planning & Control (PPC)
- ii. Operational and Tactical Systems
- iii. Strategic Manufacturing Systems
- iv. Supply Chain Management (SCM) Systems
- v. Just-in-Time (JIT) Manufacturing
- vi. Evolution of MRP2 to ERP