Administrative Unit: Computer and Mathematical Sciences Department

Course Prefix and Number: CISS 285

Course Title: Structured Systems Analysis and Design

Number of: Credit Hours: 3  Lecture Hours: 3  Laboratory Hours: 0

Catalog Description: This course explores the structured tools, techniques, methodologies, and the system development life cycle used to plan, analyze, design, implement/build, and maintain computer information systems. Prerequisite: CISS 234 or CISS 238 or CISS 240. Offered Fall.

Prerequisite(s)/Corequisite(s): CISS 234 or CISS 238 or CISS 240.

Text(s): Most current editions of the following:


Course Objectives:

• To understand information systems and the systems development life cycle from a business perspective.
• To examine the structured tools and techniques used to analyze and design business information systems.
• To learn techniques for fact-finding, oral and written communications, feasibility analysis, and project management.

Measurable Learning Outcomes:

• Explain intelligently the purpose of structured systems analysis and design.
• Identify the common phases associated with the software/systems development life cycle.
• Explain the importance of information to an organization and why and how it should be managed as any other resource owned by the organization.
• Identify and describe common types of information systems.
- Explain when and why data sampling should occur during systems analysis and design.
- Explain the creation of effective interviews and questionnaires.
- Identify the function of entity relationship diagrams in structured systems analysis and design.
- Define the function of data flow diagrams in structured systems analysis and design.
- Identify common mistakes that occur when creating data flow diagrams.
- Explain the common methods used to define the logic associated with all data flow diagram processes.
- Create CRUD synchronization matrices for data/process, data/location, and process/location.
- Explain the importance of program management during structured systems analysis and design.
- Explain the importance of evaluating project feasibility and how to perform cost-based analysis.
- Explain the function provided by both the request for proposal and the request for comment.
- Explain those tasks that occur during systems implementation.
- Identify those tasks that occur during systems maintenance.

Topical Outline (major areas of coverage):
- Introduction to Structured Systems Analysis and Design
  - The need for structured Systems Analysis and Design
  - The Systems Development Life Cycle (SCLC)
- The Systems Analyst and Information Systems Stakeholders
  - System Analyst skills
  - Information system stakeholders and their roles
- Business and Information Systems
  - Understanding information as a resource
  - Understanding the structure of organizations
  - Understanding the culture of organizations
  - Types of information systems
  - Electronic commerce (E-commerce) and the World Wide Web
- Using CASE Tools
  - Upper CASE Tools
  - Lower CASE Tools
- Gathering user requirements and information analysis
  - Data sampling
  - Interviewing techniques
  - Creating questionnaires
  - Observing stakeholders and their environment(s)
  - Prototyping
  - Joint Application Development (JAD)
  - Rapid Application Development (RAD)
- Data Modeling
  - Entity Relationship Diagrams
- Process Modeling
• Data Flow Diagrams
• Structured English
• Decision Tables
• Decision Trees
• CRUD Synchronization Matrices
• Data Dictionaries and Information System Metadata
• Project Management
  • Gantt charts and PERT diagrams
• Feasibility and Cost Benefit Analysis
• Economic, Technical, Schedule, and Operational Feasibility
• Preparing and Writing system Proposals
  • Request for Proposal (RFP)
  • Request for Comment (RFC)
  • Working with HW/SW vendors
• Systems Design
  • Building and testing databases and files
  • Building and testing network infrastructure
  • Writing and testing programs
  • Installing and testing purchased software
• Systems Implementation
  • Testing
  • Conversion Planning
  • User Training
• Systems Maintenance
  • Systems Enhancement
  • Reengineering
  • Reverse Engineering
  • System Failure Recovery
  • Technical Support

Recommended maximum class size for this course:  30

Library Resources:  Online databases are available at
http://www.ccis.edu/offices/library/resources.asp. You may
access them from off-campus using your eServices login
and password when prompted.

Prepared by:  Paul D. Wiedemeier
Name  ____________________________  Signature  ____________________________

Date:  February 11, 2005

NOTE:  The intention of the master syllabus is to provide an outline of the contents of this course, as
specified by the faculty of Columbia College, regardless of who teaches the course, when it is taught
or where it is taught.  Faculty members teaching this course for Columbia College are expected to
facilitate learning pursuant to the course objectives and cover the subjects listed in the topical outline.
However, instructors are also encouraged to cover additional topics of interest so long as those topics
are relevant to the course’s subject.  The master syllabus is, therefore, prescriptive in nature but also
allows for a diversity of individual approaches to course material.

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