

Standard Course Outline

IS 685 System Analysis and Design

I. General Information

- ♦ Course number: IS 685
- ♦ Title: System Analysis and Design
- ♦ Units: 3
- ♦ Prerequisites: Graduate Standing, IS 602
- ♦ Course Coordinator: Melody Kiang
- ♦ SCO Prepared by: Melody KianG
- ♦ Date prepared/revised: April 26, 2016

II. Catalog Description

Introduction to current and emerging practices, concepts, and methodologies of systems analysis and design. Requirements analysis, business process modeling, conceptual and physical design, systems implementation and maintenance, project management and teamwork, roles and responsibilities of systems analysts

III. Curriculum Justification(s)

Analysis of the information needs of an organization and the subsequent design of solutions to meet business requirements are at the heart of the information systems field. In today's ever-increasing competitive business environment, the effective filtering and use of big data for discovering and exploring business opportunities become crucial for enterprise to maintain the sustainable advantage. A well-designed enterprise information system can not only improve the productivity of the company, but also enhance the company's competitive advantage in today's technology-intensive global environment. The student will look at the major stakeholders in the process of developing information systems. Emphasis is placed on system owners, system users, project managers, system analyst, and system developers. The course covers both practical and managerial issues related to the design and analysis and modern information systems. As part of the course, students will learn skills, methodologies, techniques, tools, and perspectives essential for system's analysts and designers to successfully manage the development of information systems.

Upon completion, the student will meet the following four specific CBA learning goals:

Learning Goal #1 – Critical Thinking

Learning Goal #3 – Interpersonal, Leadership & Team Skills

Learning Goal #5 – Quantitative and Technical Skills Learning

Goal #6 – Domestic & Global Environment

IV. Course Objectives, Student Learning Outcomes, Evaluation Instruments, and Instructional Strategies for Skill Development

Students who pass IS 685 must demonstrate ...

- 1) Understand the importance of adopting a structured methodology for system development.
- 2) Prepare and use various information gathering techniques for eliciting user information requirements and systems expectation.
- 3) Perform cost-benefit analysis and feasibility study.
- 4) Describe the major alternative methodologies used in developing information systems and the considerations involved in choosing the methodology to implement.
- 5) Produce the necessary system documentation at each stage of the analysis and design of an information system.
- 6) Develop an understanding of the overall process of System Development Life Cycle -- and of the roles of the analysis, design, production, implementation, and operation phases of that cycle.
- 7) Construct and interpret a variety of system description documents and techniques such as Domain of change, Physical and logical Data flow diagrams, Entity Relationship diagrams, Structure charts, screen forms and report layouts, etc.
- 8) Knowledge of business process reengineering.
- 9) Communicate requirements effectively both in written and oral formats.
- 10) Understand the importance of these techniques as tools for information systems managers.
- 11) Manage an Information Systems Project.

V. Outline of Subject Matter

Introduction to Systems Analysis and Design

The Systems Development Environment

Types of Information Systems and Systems Development Methodologies

- Systems Development Life cycle (SDLC), prototyping, Case tools, RAD, Agile, etc.

Origins of Software

Systems Acquisition (Outsourcing, Packaged Software, In-house Development, Application

Service Provider, Open Source, Enterprise Solution Software)

Managing the Information System Project

Project Plans and Schedules

Using Project Management Software

Planning

Identifying and Selecting Systems Development Projects

Initiating and Planning the Systems Development Projects

Project Feasibility Study-Technical, Economic, Operational, Contractual, etc.

Base Line Project Plan

Planning-Deliverables

Analysis Phase

Determining Systems Requirements

Structuring System Process Requirements –Process Modeling, Data Flow diagrams

Structuring System Logic Requirements- Modeling Logic using Structure English,

Decision Tables
Structuring System Data Requirements - Conceptual Data Modeling, ERD
Analysis Phase Deliverables
Design Phase
 Designing databases
 Designing forms and Reports
 Designing Graphical Interfaces and Dialogues
 Finalizing the Design Specifications
 Design Phase Deliverables
System Prototyping
 System Deliverables
Systems implementation and maintenance

VI. Methods of Instruction

A. INSTRUCTION MODE.

May refer to University policies [Academic Technology and the Mode of Instruction \(PS 03-11\)](#) and [Course Syllabi and Standard Course Outlines \(PS 11-07\)](#), for descriptions of modes of instruction and for guidelines for non-traditional modes of instruction.¹

x Traditional Hybrid Local Online Distance Education

B. CLASSROOM ACTIVITIES. (Optional but highly recommended for core courses)

This course provides students with an in-depth understanding of the methodology, tools, and techniques involved in designing an information system for an organization, including a detailed study of the systems development life cycle. The course involves reviewing and analyzing cases and practice exercises. A semester-long project will be required, including analysis and design of an actual or hypothetical information system.

The preferred method for this course is lecture based with some lab set aside for implementing the Data and Process modeling tools and system prototyping. After each major topic is introduced students undertake short exercises to ensure their understanding of the essential concepts. The course covers all important system analysis and design topics you need to understand to manage an information system. Opportunities for class discussion, group work, and student capstone project and presentations are essential. Instructors are required to assign a course project that incorporates the entire systems development life cycle. Students should be encouraged to seek outside of the classroom fieldwork for their data gathering and requirements gathering of their final project.

C. EXTENT AND NATURE OF TECHNOLOGY USE. (Optional but highly recommended for core courses)

¹ The university policies listed are active as of 2015-2016 but may be subject to change in the future. For the most up-to-date policies, refer to the Academic Senate website's [Policy Statements](#).

Instructors must assign homework, exercises, and projects that involve the utilization of various system analysis and design techniques.

VII. Information about Textbooks/Readings

Systems Analysis and Design in a Changing World (6th) by John Satzinger, Robert Jackson, Stephen D. Burd · Cengage Learning · Paperback · 486 pages · ISBN 1111534152

VIII. Instructional Policies Requirements

IX. Course Assessment and Grading (Optional but highly recommended for core courses)

A. DESCRIPTION OF ASSESSMENT.

Homework

Students will complete individual homework profiling their competence in various subject matters.

Quizzes and Exams

Students will complete quizzes (optional), mid-term exam (required; at least one), and final exam (required).

Projects

Instructors are strongly encouraged to assign comprehensive team project that requires problem solving and the utilization of system analysis and design techniques to solve real-world problems. The students are expected to work in small-group teams and individually on parts of the overall project, and present interim and final oral and written reports. Though the final report will be the product of the team as a whole, the responsibility of the individual team members for the various parts of the report must be made clear.

B. GRADING POLICIES AND PROCEDURES.

In compliance with university policy: Final grades will be based on at least three, and preferably four or more, demonstrations of competence. In no case will the grade on any class tests count for more than one-third of the course grade.

Students are expected to attend courses and turn in assignments on time. Specific attendance and late assignment policies are up to each individual instructor's discretion.

The withdrawal policy is the same as that of the university.

X. Disabilities

XI. Assistive Technology

XII. Bibliography (Optional)

XIII. Consistency of SCO Standards across Sections

All future syllabi will conform to the SCO. The course coordinator should review the SCO and offer advice and/or materials to faculty member new to teaching the course. The course coordinator may offer or require regular review of instructors' course materials as well as anonymous samples of student work.

XIV. Additional Resources for Development of Syllabi

- ♦ University policy [Course Syllabi and Standard Course Outlines \(PS 11-07\)](#)
- ♦ Academic Technology (ATS) [Accessible Syllabus Template](#)
- ♦ Faculty Center for Professional Development (FCPD) [Sample Syllabus Template](#)