Las Positas College
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Course Outline for CIS 60

SYSTEMS ANALYSIS AND DESIGN

Effective: Spring 2016

I. CATALOG DESCRIPTION:
CIS 60 — SYSTEMS ANALYSIS AND DESIGN — 3.00 units

The course presents a systematic methodology for analyzing a business problem or opportunity, determining the role which computer-based technologies can play in addressing the business need, articulating business requirements for the technology solution, specifying alternative approaches to acquiring the technology capabilities needed to address the business requirements, and specifying the requirements for the information systems solution in particular, in-house development, development from third-party providers, or purchased commercial-off-the-shelf packages. Provides the opportunity to follow systems development life cycle (SDLC): analyze current systems, design logical and physical systems, program development, implementation, testing, maintenance, and documention.

3.00 Units Lecture

Strongly Recommended
CIS 50 - Intro to Computing Info Tech
with a minimum grade of C

Grading Methods:
Letter or P/NP

Discipline:

	MIN
Lecture Hours:	54.00
No Unit Value Lab	18.00
Total Hours:	72.00

II. NUMBER OF TIMES COURSE MAY BE TAKEN FOR CREDIT: 1

III. PREREQUISITE AND/OR ADVISORY SKILLS:

Before entering this course, it is strongly recommended that the student should be able to:

A. CIS50

IV. MEASURABLE OBJECTIVES:

Upon completion of this course, the student should be able to:

A. Articulate the types of business needs that can be addressed using information technology-based solutions.
B. Initiate, specify, and prioritize information systems projects and to determine various aspects of feasibility of these projects.
C. Clearly define problems, opportunities, or mandates that initiate projects.
D. Use at least one specific methodology for analyzing a business situation (a problem or opportunity), modeling it using a formal technique, and specifying requirements for a system that enables a productive change in a way the business is conducted.
E. Within the context of the methodologies they learn, write clear and concise business requirements documents and convert them into technical specifications.
F. Communicate effectively with various organizational stakeholders to collect information using a variety of techniques and to convey proposed solution characteristics to them.
G. Manage information systems projects using formal project management methods.
H. Articulate various systems acquisition alternatives, including the use of packaged systems (such as Enterprise Resource Planning [ERP], Customer Relationship Management [CRM], Supply Chain Management [SCM], etc.) and outsourced design and development resources.
I. Use contemporary Computer-Aided Software Engineering (CASE) tools for the use in process and data modeling.
J. Compare the acquisition alternatives systematically.
K. Incorporate principles leading to high levels of security and user experience from the beginning of the systems development process.
L. Design high-level logical system characteristics (user interface design, design of data and information requirements).
M. Analyze and articulate ethical, cultural, and legal issues and their feasibilities among alternative solutions.

V. CONTENT:
A. Identification of opportunities for IT-enabled organizational change
B. Business process management
C. Analysis of business requirements

1. Business Process Modeling
2. Information Requirements

D. Structuring of IT-based opportunities into projects
E. Project specification
F. Project prioritization
G. Analysis of project feasibility
    1. Operational
    2. Tangible costs and benefits (financial and other measures such as time savings)
    3. Intangible costs and benefits such as good will, company imaged
    4. Technical
    5. Schedule
    6. Legal
    7. Cultural (organizational and ethnic)
H. Fundamentals of IS project management in the global context
I. Using globally distributed communication and collaboration platforms
J. Analysis and specification of system requirements
    1. Data collection methods
    2. Methods for structuring and communicating requirements
    3. Factors affecting user experienced
    4. User interface design
    5. System data requirements
    6. Factors affecting securityg
    7. Ethical considerations in requirements specification
K. Different approaches to implementing information systems to support business requirements
    1. Packaged systems; enterprise systems
    2. Outsourced development
    3. In-house development
L. Specifying implementation alternatives for a specific system
M. Impact of implementation alternatives on system requirements specification
N. Methods for comparing systems implementation approaches
O. Organizational implementation of a new information system
P. Different approaches to systems analysis & design:
    1. structured SDLC,
    2. unified process/UML
    3. agile methods

VI. METHODS OF INSTRUCTION:

A. **Written exercises and case studies** -
B. **Lecture** -
C. Optional: System analysis and design project completed in teams
D. **Demonstration** -
E. **Discussion** -
F. **Lab** - Assignments

VII. TYPICAL ASSIGNMENTS:

A. Homework and lab programming assignments will be given throughout the course, each to be awarded points. At the student's option, a project may be completed in lieu of some small assignments.
B. Homework includes
    1. Reading assignments
    2. Technical writing and system design activities. Example:
        - You work in the circulation department for a magazine. The magazine's IS department prints a monthly report showing the current number of subscribers in each ZIP code. One of your tasks each month is to calculate the total number of users for the current month and enter the total into a worksheet.
        - You then create a line chart showing the increase or decrease in total subscribers for the current year. It currently takes you four hours each month to complete this task.
        - Write a one-page report that defines the problem, identify and describe two possible solutions to the problem, and recommend a solution.

VIII. EVALUATION:

A. **Methods**

    1. Exams/Tests
    2. Quizzes
    3. Oral Presentation
    4. Group Projects
    5. Class Participation
    6. Class Work
    7. Home Work
    8. Lab Activities
    9. Other:
        a. Case Studies

B. **Frequency**

    1. Recommend 2 or 3 quizzes/exams plus final examination
    2. Recommend class work, labs and/or homework assignments to cover each topic within course content. Contents can be combined.
    3. 1-2 group projects and/or case studies which include oral presentations

IX. TYPICAL TEXTS:

1. Rosenblatt, Harry. *Systems Analysis and Design.* 10 ed., Cengage, 2014.
2. Kendall, Kenneth, and Julie Kendall. *Systems Analysis and Design.* 9th ed., Pearson, 2014.
3. Satzinger, John, Robert Jackson, and Stephen Burd. *Systems Analysis and Design in a Changing World.* 7th ed., Cengage, 2016.

X. OTHER MATERIALS REQUIRED OF STUDENTS:

A. Access to a word processor and any type of office productivity software suite (example: Libre Office, Microsoft Office, etc.)
B. Software that can be used to draw analysis diagrams is invaluable. Libra Draw or Microsoft Visio is ideal. Libra Office or Microsoft Office Suite drawing tools are adequate.
C. Internet access