

CIS 076: INTRODUCTION TO SYSTEMS ANALYSIS AND DESIGN

Originator

fmarhuenda

Justification / Rationale

C-ID: ITIS 140 and transfer to CSUSB

Effective Term

Fall 2019

Credit Status

Credit - Degree Applicable

Subject

CIS - Computer Information Systems

Course Number

076

Full Course Title

Introduction to Systems Analysis and Design

Short Title

SYSTEM ANALYSIS & DESIGN

Discipline**Disciplines List**

Computer Information Systems (Computer network installation, microcomputer technology, computer applications)

Modality

Face-to-Face

Catalog Description

The course presents a systematic methodology for analyzing a business problem or opportunity, determining what role, if any, 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.

Schedule Description

The course presents a systematic methodology for analyzing a business problem or opportunity, determining what role, if any, 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.

Prerequisite: CIS 010

Lecture Units

2

Lecture Semester Hours

36

Lab Units

1

Lab Semester Hours

54

In-class Hours

90

Out-of-class Hours

72

Total Course Units

3

Total Semester Hours

162

Prerequisite Course(s)

CIS 010

Required Text and Other Instructional Materials**Resource Type**

Book

Open Educational Resource

No

Author

Tilley, S. and Rosenblatt, H.

Title

Systems Analysis and Design

Edition

11th

City

Boston

Publisher

Cengage Learning

Year

2016

College Level

Yes

Flesch-Kincaid Level

12

ISBN #

9781305494602

Resource Type

Book

Author

Arlow, J., Neustadt, I.

Title

UML 2 and the Unified Process: Practical Object-Oriented Analysis and Design

Edition

2nd

Publisher

Addison-Wesley Professional

Year

2015

College Level

Yes

Flesch-Kincaid Level

12

ISBN #

978-032132127

Class Size Maximum

32

Entrance Skills

Identify the key features and software such as operating systems, word processors, spreadsheets, databases, communications, and graphics.

Prerequisite Course Objectives

CIS 010-Explain the basic concepts and understand the uses of various categories of productivity software, including word processing, electronic spreadsheets and database management.

Entrance Skills

Identify the fundamental computer concepts and terminology used for input, processing, output, and storage.

Prerequisite Course Objectives

CIS 010-Using computers effectively requires that students can express their instructions in a form that the computer program can understand and execute.

CIS 010-Students must understand what they want to accomplish, what logical steps are required to accomplish the objective, and how to submit instructions to the computer to achieve the required objective.

CIS 010-Compare and contrast the basic categories of system software and application software.

CIS 010-Explain and discuss the system development life-cycle and the software development process.

Entrance Skills

Apply the principles of and solve problems with computer applications.

Prerequisite Course Objectives

CIS 010-All of the courses in the Computer Information Systems program require students to learn to think critically.

CIS 010-Students must understand what they want to accomplish, what logical steps are required to accomplish the objective, and how to submit instructions to the computer to achieve the required objective.

Course Content

1. Identification of opportunities for IT-enabled organizational change
2. Business process management
3. Analysis of business requirements
4. Structuring of IT-based opportunities into projects
5. Fundamentals of IS project management in the global context
6. Project specification
7. Project prioritization
8. Analysis of project feasibility
9. User interface design
10. Data design
11. System architecture
12. Using globally distributed communication and collaboration platforms

13. Analysis and specification of system requirements
14. Define problems, opportunities, or mandates that initiate projects.
15. Different approaches to implementing information systems to support business requirements
16. Specifying implementation alternatives for a specific system
17. Impact of implementation alternatives on system requirements specification
18. Methods for comparing systems implementation approaches
19. Object modeling development strategies
20. Introduce basic concepts of Object Oriented Analysis and Design using Unified Modeling Language (UML) and the Unified Process (UP).
21. Organizational implementation of a new information system
22. Different approaches to systems analysis & design: structured SDLC, unified process/UML, agile methods
23. Use contemporary Computer-Aided Software Engineering (CASE) tools for the use in process and data modeling.

Lab Content

Lab content will be covered through individual and/or group activities. These activities are project-based and centered on the following content:

- Creating feasibility studies
- Modeling techniques in system design
- Interpreting and analyzing documentation and standards
- Certification testing and system accreditation practices
- Implementation strategies
- Compare the acquisition alternatives systematically.

Course Objectives

Objectives	
Objective 1	Articulate the types of business needs that can be addressed using information technology-based solutions.
Objective 2	Initiate, specify, and prioritize information systems projects and to determine various aspects of feasibility of these projects.
Objective 3	Within the context of the methodologies they learn, write clear and concise systems requirements and convert them into technical specifications.
Objective 4	Communicate effectively with various organizational stakeholders to collect information using a variety of techniques and to convey proposed solution characteristics to them.
Objective 5	Manage information systems projects using formal project management methods.
Objective 6	Incorporate principles leading to high levels of security and user experience from the beginning of the systems development process.
Objective 7	Design high-level logical system characteristics (user interface design, design of data and information requirements).
Objective 8	Analyze and articulate ethical, cultural, and legal issues and their feasibility among alternative solutions.

Student Learning Outcomes

Upon satisfactory completion of this course, students will be able to:	
Outcome 1	Analyzing a business problem or opportunity using a systematic method to determine if computer-based technologies can address the need.
Outcome 2	Articulate requirements for a technology based solution, specifying alternatives.
Outcome 3	Specify requirements for various information systems solutions.

Methods of Instruction

Method	Please provide a description or examples of how each instructional method will be used in this course.
Lecture	Presentation of class lectures/discussions/demonstrations to model and explain the fundamental concepts of the system development life-cycle.
Laboratory	
Discussion	Students will discuss the different approaches to implementing information systems to support business requirements.

Demonstration, Repetition/Practice	Discuss different approaches to systems analysis and design: structured SDLC, unified process/UML, agile methods.
Collaborative/Team	Groups of students will work on analyzing the feasibility of a project.
Activity	Students will apply and discuss the methods for comparing systems implementation approaches in a case study.

Methods of Evaluation

Method	Please provide a description or examples of how each evaluation method will be used in this course.	Type of Assignment
Written homework	Weekly homework assignments that demonstrate mastery of the principles of structured and O-O analysis and modeling will be given. Homework assignments will be evaluated on completeness (are each of the core elements in the case study identified and included in the model), correctness (are the appropriate symbols being used and is the model/diagram syntactically correct), and documentation/presentation (spelling, grammar, formatting, and is the technical narrative written at a level appropriate for the user/reader).	In and Out of Class
Laboratory projects	Activities centered around each step of the design process.	In Class Only
Presentations/student demonstration observations	A technical report and presentation on an elective topic of the student's choosing (and with instructor approval) will be required. Presentations and reports will be evaluated on content (depth of coverage, relevance of ER diagrams and illustrations, and appropriate use of examples), suitability (relevance of topic, written to an appropriate level for the class, sufficient new material), and presentation (spelling, grammar, formatting).	In Class Only
Tests/Quizzes/Examinations	Two to four exams will be given that demonstrate mastery of course objectives. For example: multiple choice questions to demonstrate the mastery of information architecture concepts; case/narrative problems on data modeling and dataset design, and the identification of entities modeled on an ER diagram.	In and Out of Class
Student participation/contribution	Participation and guided discussion will be given as a means to measure student's understanding of project management and TQM principles. Students will be evaluated on their willingness to contribute, suitability (applicability to the topic at hand), and content. In regard to written participation activities, evaluation might also consider completeness (were all 'talking points' [Quality awards, Demming, Bldrige, PDCA, project management body of knowledge, PMBOK, ...] addressed in the response) and presentation (spelling, grammar, and format). In addition, the use of ER diagrams that demonstrates knowledge of entities, attributes, and relationships in the context of an ER diagram will be demonstrated.	In and Out of Class

Assignments

Other In-class Assignments

1. In order to get to third normal form, we need to make sure all columns are only dependent upon the primary key. That means we have to get the country code out of the artist table. For this assignment, we will add country name to the table to further highlight the issue with normalizing.
2. Develop a scenario with different user accounts accessing a public managed DB. Then students will use GRANT and REVOKE DCL SQL features to assign privileges or restrictions to users.

3. Students will be presented with several case studies and they will need to determine which, the OLAP or OLTP model, is the correct one to use in that scenario.
4. Develop full system analysis reports.
5. Use the Waterfall model to develop a working prototype.
6. Discuss the modern approach to systems analysis and design that combines both process and data views of systems.

Other Out-of-class Assignments

1. Students will be tasked with evaluating a particular website by using the usability framework. The basic usability test contains five measures that help developers of user interface to figure if users encounter problems while using a particular user interface:
 - a. Time to execute task – speed of performing a task with the system
 - b. Amount of errors – the number of wrong moves in navigating or executing a procedure
 - c. Time to learn – time for learning to execute a procedure properly
 - d. Retention over time – extent of memorizing learned procedures over time
 - e. User satisfaction - user's liking of the interface; subjective
2. Analyze business case with CASE and Project Management tools.
3. Repeat the process of designing forms, reports, interfaces and dialogues for their creation.
4. Plan interview questions to determine system requirements of a business case study.
5. Apply data-flow diagramming mechanics, definitions, and rules.

Grade Methods

Letter Grade Only

Comparable Transfer Course Information**University System**

CSU

Campus

CSU San Bernardino

Course Number

IST 275

Course Title

Systems Analysis and Design

Catalog Year

2018

University System

UC

Campus

UC Santa Cruz

Course Number

TIM 58

Course Title

Systems Analysis and Design

MIS Course Data**CIP Code**

11.0501 - Computer Systems Analysis/Analyst.

TOP Code

070730 - Computer Systems Analysis

SAM Code

C - Clearly Occupational

Basic Skills Status

Not Basic Skills

Prior College Level

Not applicable

Cooperative Work Experience

Not a Coop Course

Course Classification Status

Credit Course

Approved Special Class

Not special class

Noncredit Category

Not Applicable, Credit Course

Funding Agency Category

Not Applicable

Program Status

Program Applicable

Transfer Status

Transferable to CSU only

Allow Audit

No

Repeatability

No

Materials Fee

No

Additional Fees?

No

Files Uploaded

Attach relevant documents (example: Advisory Committee or Department Minutes)

CIS 076 Approval Letter.pdf

Approvals**Curriculum Committee Approval Date**

10/18/2018

Academic Senate Approval Date

10/25/2018

Board of Trustees Approval Date

11/14/2018

Chancellor's Office Approval Date

11/28/2018

Course Control Number

CCC000598705

Programs referencing this course

Computer Information Systems Associate of Science and Transfer Preparation (<http://catalog.collegeofthedesert.eduundefined?key=221>)

Computer Information Systems AS Degree for Employment Preparation (<http://catalog.collegeofthedesert.eduundefined?key=61>)