Syllabus for
CIT 304—Systems Analysis/Design
3 Credit Hours
Spring 2012

I. COURSE DESCRIPTION

An overview of a system's development life cycle. It emphasizes current system documentation through the use of both classical and structured tools/designs, input and output designs, program specifications, and a study of structured systems development. Emphasizes strategies and techniques of structured design for producing logical methodologies for dealing with complexity in developing information systems. Includes in-depth discussion of the information gathering and reporting activities of the transition from analysis to design.
Prerequisite: CSC 111.

II. COURSE GOALS

The purpose of this course is to enable the student to do the following:

A. Understand the scope of an entry-level position as systems analysts and designers.

B. Understand the impact of computers on modern society.

C. Prepare for further study in management information systems and computer science, including graduate work.

D. Think critically about the different ways systems are developed.

E. Learn what is required to perform well in entry-level positions as system analysis and designers.

F. Comprehend the different ways systems are developed.

G. Learn how to design or improve a complete system while relating critically in a group environment when obtaining data concerning a system.

H. Gain an understanding of a network model and prototype.

III. STUDENT LEARNING OUTCOMES FOR THIS COURSE

A. Terminal Objectives

As a result of successfully completing this course, the student will be able to do the following:

1. Discuss computer systems analysis principles, tools, techniques, and approaches.
2. Analyze processes, programs, and database structures required by computer systems.
3. Explain how all the phases and subphases of systems analysis can be applied to the design phase of the system development life cycle.
4. Employ the most often used and/or appropriate analysis methodologies.
5. Perform well in entry-level positions as systems analysts and designers.

6. Demonstrate the ability to further study in management information systems and computer science at the graduate level.
7. Explain and discuss different ways computer systems are developed.
8. Use problem solving techniques related to the management of computer information systems.
9. Discuss and demonstrate network modeling and data analysis.

B. Unit Objectives

Unit 1

As a result of successfully completing this unit, the student will be able to do the following:

1. Explain the systems analyst's role and responsibilities in a typical organization or business.
2. Define systems planning, systems analysis, systems design, systems implementation, and systems support.
3. Describe the four major groups of information processors and users.
4. Describe the various information functions provided by information systems.
5. Describe the events and activities in a systems-development life cycle.
6. Compare and contrast the several popular systems-development techniques and their principal supporters, strategies, tools, and approaches.
7. Discuss the principles related to successful management of a systems analysis and design project.
8. Apply the tools and techniques necessary to discover the facts about existing and proposed systems.
9. Perform a feasibility analysis to determine the feasibility of continuing with a systems design project.
10. Design system input, output, and controls.
11. Perform an in-depth analysis for the design of a database management system.
12. Identify and create a human computer interface.

Unit 2

As a result of successfully completing this unit, the student will be able to do the following:

1. Describe the principles, techniques, and tools related to computer-aided systems engineering.
2. Perform the major duties required in systems planning.
3. Describe the study, definition, and analysis phases of the systems-development life cycle.
4. Describe several systems-modeling techniques and their roles in systems analysis.
5. Define modeling and explain why it is important.
6. Create entity-relationship-data models.
7. Define process modeling and explain why it is important.
8. Discuss how process models and data models are related.
9. Discuss the systems design process in terms of selection, acquisition, and integration.
10. Describe the traditional and prototyping approaches to system design.
11. Define centralized, distributed, and cooperative processing as design alternatives.
12. Describe the principles, tools, and techniques related to creating appropriate system environments, alternatives, and decisions.
13. List the major processes required for developing the implementation and support factions of a system.

14. Use the appropriate tools and techniques to define data requirements for a new computer system.
15. Create system structure charts to reflect the organization of a system.
16. Develop user-friendly interfaces between humans and computers.

Unit 3

As a result of successfully completing this group and/or individual project, the student will be able to do the following:

1. Demonstrate the ability to perform an analysis.
2. Present the analysis process, conclusions, and recommendations in a formal setting.
3. Apply healthy, effective interpersonal skills to a systems design project.
4. Discuss the activities that take place during the development and support phase of the system development life cycle.
5. Demonstrate the ability to design a system based on the analysis phase.
6. Present a report demonstrating ability.

IV. TEXTBOOKS AND OTHER LEARNING RESOURCES

A. Required Materials

1. Textbooks

   Whitten, Jeffery L., and Lonnie D. Bentley. *Systems Analysis and Design Methods.* 7th ed. New York: Irwin/McGraw Hill, 2010. ISBN-13: 978-0-07-3052335

2. Other

   None

B. Optional Materials

1. Textbooks

   None

2. Other

   None

V. POLICIES AND PROCEDURES

A. University Policies and Procedures

1. Attendance at each class or laboratory is mandatory at Oral Roberts University. Excessive absences can reduce a student's grade or deny credit for the course.
2. Students taking a late exam because of an unauthorized absence are charged a late exam fee.
3. Students and faculty at Oral Roberts University must adhere to all laws addressing the ethical use of others' materials, whether it is in the form of print, electronic, video, multimedia, or computer software. Plagiarism and other forms of cheating involve both lying and stealing and are violations of ORU's Honor Code: "I will not cheat or plagiarize; I will do my own academic work and will not inappropriately collaborate with other students on assignments." Plagiarism is usually defined as copying someone else's ideas, words, or sentence structure and submitting them as one's own. Other forms of academic dishonesty include (but are not limited to) the following:
   a. Submitting another's work as one's own or colluding with someone else and submitting that work as though it were his or hers;

b. Failing to meet group assignment or project requirements while claiming to have done so;
c. Failing to cite sources used in a paper;
d. Creating results for experiments, observations, interviews, or projects that were not done;
e. Receiving or giving unauthorized help on assignments.

By submitting an assignment in any form, the student gives permission for the assignment to be checked for plagiarism, either by submitting the work for electronic verification or by other means. Penalties for any of the above infractions may result in disciplinary action including failing the assignment or failing the course or expulsion from the University, as determined by department and University guidelines.

4. Final exams cannot be given before their scheduled times. Students need to check the final exam schedule before planning return flights or other events at the end of the semester.
5. Students are to be in compliance with University, school, and departmental policies regarding Whole Person Assessment (WPA) requirements. Students should consult the Whole Person Assessment handbooks for requirements regarding general education and the students' majors.
   a. The penalty for not submitting electronically or for incorrectly submitting an artifact is a zero for that assignment.
   b. By submitting an assignment, the student gives permission for the assignment to be assessed electronically.

B. Department Policies and Procedures
1. A fee of $15.00 is assessed for all late exams. This policy applies to all exams taken without notifying the professor prior to the regularly scheduled exam time and to all exams taken late without an administrative excuse.
2. Any student whose unexcused absences total 33% or more of the total number of class sessions receives an F for the course grade.

C. Course Policies and Procedures
1. Evaluation Procedures

Homework	20%
Group and/or Individual Projects	20%
Exams	40%
Final Exam	20%

2. Whole Person Assessment Requirements
   Check the WPA handbook for the requirements.
3. Other Policies and/or Procedures
   This course participates in the CSC/Math Participation Development Points Program. A maximum of 10 points is allowed to be added to the total points accumulated for the course.

VI. COURSE CALENDAR

Unit	Lesson	Topic	Reading Assignment
I	1	Introduction	
	2-3	Modern Systems Analysts	Chapter 1
	4-6	System Information Building	Chapter 2
	7-9	System Development	Chapter 3
	10-12	Project Management	Chapter 4
	13	EXAM I	Approx. 4th Week
II	14-15	Systems Analysis Phase	Chapter 5
	16-18	Requirements Discovery	Chapter 6
	18-19	Data and Object Modeling	Chapter 7
	20-22	Process Modeling	Chapter 8
	23-24	Feasibility Study	Chapter 10
	25	EXAM II	Approx 12th Week
III	26-29	Design Architecture	Chapter 11-12
	30	Database Design	Chapter 13
	31-33	User Interface	Chapter 16
	34-35	Input and Output Design	Chapter 15
	36-37	Object-Oriented Design	Chapter 17
	38	EXAM III	
	39-42	Project Review and Presentations	
	44	Final Examination	

Course Inventory for ORU's Student Learning Outcomes
CIT 304—Systems Analysis
Spring 2012

This course contributes to the ORU student learning outcomes as indicated below:
Significant Contribution – Addresses the outcome directly and includes targeted assessment.
Moderate Contribution – Addresses the outcome directly or indirectly and includes some assessment.
Minimal Contribution – Addresses the outcome indirectly and includes little or no assessment.
No Contribution – Does not address the outcome.

The Student Learning Glossary at http://ir.oru.edu/doc/glossary.pdf defines each outcome and each of the proficiencies/capacities.

OUTCOMES & Proficiencies/Capacities		Significant Contribution	Moderate Contribution	Minimal Contribution	No Contribution
1	**Outcome #1 – Spiritually Alive** Proficiencies/Capacities				
1A	Biblical knowledge				X
1B	Sensitivity to the Holy Spirit				X
1C	Evangelistic capability				X
1D	Ethical behavior		X		
2	**Outcome #2 – Intellectually Alert** Proficiencies/Capacities				
2A	Critical thinking	X			
2B	Information literacy		X		
2C	Global & historical perspectives				X
2D	Aesthetic appreciation			X	
2E	Intellectual creativity		X		
3	**Outcome #3 – Physically Disciplined** Proficiencies/Capacities				
3A	Healthy lifestyle				X
3B	Physically disciplined lifestyle				X
4	**Outcome #4 – Socially Adept** Proficiencies/Capacities				
4A	Communication skills	X			
4B	Interpersonal skills		X		
4C	Appreciation of cultural & linguistic differences				X
4D	Responsible citizenship				X
4E	Leadership capacity		X		