# COURSE SYLLABUS
# COM290: Systems Design and Implementation

## Course Description
Students will apply the fundamental concepts of systems analysis and design in a comprehensive capstone project. Students will use the concepts and skill sets acquired in the previous classes to design and build an IT solution in a real world business scenario. The comprehensive capstone project will require students to work cooperatively in designing and implementing all aspects of an IT system.

## General Course Information

| | |
|---|---|
| Number of Units/Weeks | 08/10 |
| #Hours Lecture/#Hours Laboratory/#Hours Homework | 60/40/120 |
| Prerequisite(s) | ENG200, SEC210, COM239, COM242, COM262 |
| Co-requisites (s) | None |
| Course Developer(s) | Leticia Rabor, M.S. |
| Date Approved / Last Review | August 2012 / January 2016 |

## Learning Outcomes
- Identify a business problem, characterize its decision parameters and variables and organize them into a proper analytical model, and perform the correct solution procedure to come to a sound recommendation.
- Demonstrate to orally communicate ideas and concepts clearly and in an organized manner.
- Demonstrate the ability to write clear system documentation, user documentation, and security documentation.
- Demonstrate the ability to use current techniques, skills and tools for system development practice.
- Work effectively in teams in designing and implementing software systems.
- Design and implement a comprehensive information system.
- Discuss the five phases of the Systems Development Life Cycle (SDLC).
- Discuss their role as a software system analyst and programmer professional in support of overall business objectives and processes.

## Instructional Methods Employed in this Course
- Lecture and reading assignments
- Hands-on exercises and labs
- Research

- Student presentations
- Practical application of theory and skills in authentic projects
- Build on prior knowledge and experience of students to enhance richness of class activities

## Information Resources for this Course

**Textbook**

John Satzinger, Robert Jackson, and Stephen Ford. Systems Analysis and Design In A Changing World, 7th edition. Cengage Learning, Boston, MA, 2016. ISBN-13: 978-1-305-11720-4.

**Student Companion Site**

Cengage Brain
http://www.cengagebrain.com/

**Other Materials**

Coleman College. The College Writer's Guide. San Diego: Coleman College, 2009.

**Web Site Readings**

Software Design Tutorials
http://www.smartdraw.com/tutorials/software-uml/uml.htm
May 23, 2012

Object Management Group
http://www.omg.org
May 23, 2012

## Table/Topics & Assignments

**Types of Assignments:**

Lecture -
Considered Lecture Hours

**Classroom Discussion -**
Considered Lecture Hours

**In Class Critique -**
Considered Lecture Hours

**Delivering Oral Presentations -**
Considered Lecture Hours

**In Class (IC) Exercise -**
Considered Lecture Hours

**Reading -** +-

Considered Homework (HW), work done outside of class

**WebClass lesson (non-online courses) -**

Considered HW, work done outside of class

**Lab Work -**

Considered Lab Hours

**Quiz, Midterm or Final -**

Considered Lecture Hours

| **Week 1** | | | | | | |
|---|---|---|---|---|---|---|
| **Type** | **Topic/Description** | **LEC Hours** | **LAB Hours** | **HW Hours** | **Point Value** | **Due** |
| LEC 1A | Intro to Systems Analysis & Design | 2 | | | | |
| LEC 1B | The Role of the Systems Analysis Preliminary Investigation | 2 | | | | |
| LEC 1C | Project Planning and Project Management | 2 | | | | |
| LAB 1A | Exercise 1: System Vision Document Memo Evaluation: graded | | 2 | | 50 | Next Class Meeting |
| LAB 1B | Exercise 2: Project Scope Memo. Evaluation: graded | | 2 | | 50 | Next Class Meeting |
| HW 1A | Read Chapter 1 45 pages Evaluation: Exercises/Project | | | 4.5 | | |
| HW 1B | Read Chapter 2 31 pages Evaluation: Exercises/Project | | | 3.1 | | |
| HW 1C | Read Chapter 11 37 pages Evaluation: Exercises/Projects | | | 3.7 | | |
| Total Week 1 | | 6 | 4 | 11.3 | 100 | |
| **Week 2** | | | | | | |
| **Type** | **Topic/Description** | **LEC Hours** | **LAB Hours** | **HW Hours** | **Point Value** | **Due** |
| LEC 2A | Investigating System Requirements | 3 | | | | |

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|---|---|---|---|---|---|---|
| | (Requirements Modeling) | | | | | |
| LEC 2B | Communication & Project Management Techniques (Cost Benefit Analysis) | 3 | | | | |
| LAB 2A | Requirements Determination Evaluation: To be included in Project Proposal 1 | | 2 | | | Week 3 |
| LAB 2B | Cost-Benefit Analysis Evaluation: To be included in Project Proposal 1 | | 2 | | | Week 3 |
| HW 2A | Read Chapter 2, 31 pages Evaluation: Exercises/Projects | | | 3.1 | | |
| HW 2B | Read Online Chapter C, 28 pages Evaluation: Exercises/Projects | | | 2.8 | | |
| Total Week 2 | | 6 | 4 | 5.9 | 0 | |

## Week 3

| Type | Topic/Description | LEC Hours | LAB Hours | HW Hours | Point Value | Due |
|---|---|---|---|---|---|---|
| LEC 3A | Domain Modeling | 2 | | | | |
| LEC 3B | The Traditional Approach to Requirements (DFD Modelling) | 2 | | | | |
| LEC 3C | Foundations for Systems Design Designing the User Interface | 2 | | | | |
| LAB 3A | DFD Evaluation: To be included in Project Proposal 2 | | 1 | | | Week 4 |
| LAB 3B | User Interface Design Evaluation: To be included in Project Proposal 2 | | 1 | | | Week 4 |
| LAB 3C | Data Design Evaluation: To be included in Project Proposal 2 | | 1 | | | Week 4 |
| LAB 3D | Project Proposal 1 Evaluation: graded, 10 points | | 1 | | 100 | By the End of the Class |

| | | | | | | |
|---|---|---|---|---|---|---|
| HW 3A | Read Chapter 4<br>36 pages<br>Evaluation:<br>Exercises/Projects | | | 3.6 | | |
| HW 3B | Read Online Chapter B, 33 pages<br>Evaluation:<br>Exercises/Projects | | | 3.3 | | |
| HW 3C | Read Chapters 6 & 8, 64 pages<br>Evaluation:<br>Exercises/Projects | | | 6.4 | | |
| Total Week 3 | | 6 | 4 | 13.3 | 100 | |

**Week 4**

| Type | Topic/Description | LEC Hours | LAB Hours | HW Hours | Point Value | Due |
|---|---|---|---|---|---|---|
| LEC 4A | Designing the Database | 3 | | | | |
| LEC 4B | Defining the Systems Architecture | 3 | | | | |
| LAB 4A | Project Proposal 2<br>Evaluation: graded, 10 points | | 4 | | 100 | By the End of the Class |
| HW 4A | Read Chapter 9<br>35 pages<br>Evaluation:<br>Exercises/Projects, | | | 3.5 | | |
| HW 4B | Read Chapter 7<br>31 pages<br>Evaluation:<br>Exercises/Projects | | | 3.1 | | |
| Total Week 4 | | 6 | 4 | 6.6 | 100 | |

**Week 5**

| Type | Topic/Description | LEC Hours | LAB Hours | HW Hours | Point Value | Due |
|---|---|---|---|---|---|---|
| LEC 5A | Approaches to Systems Development | 1 | | | | |
| LEC 5B | Quiz Chapters 1-2, 4, 6-11 Online Chapters A-C | 3 | | | | |
| LAB 5A | Write-ups<br>Evaluation: To be included in the presentation | | 4 | | | Week 5 |
| LAB 4B | Final Project Proposal<br>Evaluation: graded | | | | 100 | By the End of the Class |

| | | | | | | |
|---|---|---|---|---|---|---|
| HW 5B | Read Chapter 10<br>**29 pages Evaluated by Exercises/Projects** | | | 2.9 | | |
| EXAM 5A | Midterm Exam<br>Chapters 1-2, 4, 6-11<br>Online Chapters A-C | 2 | | | 250 | |
| Total Week 5 | | 6 | 4 | 2.9 | 350 | |

**Week 6**

| Type | Topic/Description | LEC Hours | LAB Hours | HW Hours | Point Value | Due |
|---|---|---|---|---|---|---|
| LEC 6A | Implementation Project | 6 | | | | |
| LAB 6A | Implementation Project | | 4 | | | Week 7 |
| HW 6A | Implementation Project | | | 16 | | |
| Total Week 6 | | 6 | 4 | 16 | 0 | |

**Week 7**

| Type | Topic/Description | LEC Hours | LAB Hours | HW Hours | Point Value | Due |
|---|---|---|---|---|---|---|
| LEC 7A | Implementation Project | 6 | | | | |
| LAB 7A | Code Review 1: Implementation Project Evaluation: graded, (code review 1) | | 4 | | 100 | By the End of the Class |
| HW 7A | Implementation Project | | | 15 | | |
| Total Week 7 | | 6 | 4 | 15 | 100 | |

**Week 8**

| Type | Topic/Description | LEC Hours | LAB Hours | HW Hours | Point Value | Due |
|---|---|---|---|---|---|---|
| LEC 8A | Implementation Project | 6 | | | | |
| LAB 8A | Implementation Project | | 4 | | | Week 9 |
| HW 8A | Implementation Project | | | 16 | | |
| Total Week 8 | | 6 | 4 | 16 | 0 | |

**Week 9**

| Type | Topic/Description | LEC Hours | LAB Hours | HW Hours | Point Value | Due |
|---|---|---|---|---|---|---|
| LEC 9A | Implementation Project | 6 | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| LAB 9A | Code Review 2: Implementation Project Evaluation: graded, (code review 2 on server) | | 4 | | 150 | By the End of the Class |
| HW 9A | Implementation Project | | | 16 | | |
| Total Week 9 | | 6 | 4 | 16 | 150 | |

| **Week 10** | | | | | | |
|---|---|---|---|---|---|---|
| **Type** | **Topic/Description** | **LEC Hours** | **LAB Hours** | **HW Hours** | **Point Value** | **Due** |
| LEC 10A | Present and Explain System | 6 | | | | |
| LAB 10A | System Presentation Evaluation: graded | | 4 | | 100 | By the End of the Class |
| HW 10A | Present and Explain System | | | 17 | | |
| Total Week 10 | | 6 | 4 | 17 | 100 | |

## Course Hours Summary

| Week | Topic | LEC Hours | LAB Hours | HW Hours |
|---|---|---|---|---|
| 1 | Intro to Systems Analysis & Design, Role of the Systems Analysis & Preliminary Investigation, Project Planning & Management | 6 | 4 | 11.3 |
| 2 | Investigating System Requirements (Requirements Modeling), Communication, Project Management Techniques (Cost Benefit Analysis) | 6 | 4 | 5.9 |
| 3 | Domain Modeling, Traditional Approach to Requirements (DFD Modeling), Foundations for Systems Design, Designing the User Interface | 6 | 4 | 13.3 |
| 4 | Systems Architecture , Designing the Database | 6 | 4 | 6.6 |
| 5 | Systems Implementation | 6 | 4 | 2.9 |
| 6 | Implementation Project | 6 | 4 | 16 |
| 7 | Implementation Project | 6 | 4 | 15 |
| 8 | Implementation Project | 6 | 4 | 16 |
| 9 | Implementation Project | 6 | 4 | 16 |
| 10 | Present and Explain System | 6 | 4 | 17 |
| Total | | 60 | 40 | 120 |

## Table/Point Breakdown

| Week | Assignment | Possible Points | Percent of Grade |
|---|---|---|---|
| 1 | Exercise 1: System Vision Document Memo | 50 | 5% |

| | | | |
|---|---|---|---|
| 1 | Exercise 2: Project Scope Memo | 50 | 5% |
| 3 | Proposal 1 | 100 | 10% |
| 4 | Proposal 2 | 100 | 10% |
| 5 | Final Project Proposal | 100 | 10% |
| 5 | Midterm | 250 | 25% |
| 6 | Code Review 1: Implementation Project | 100 | 10% |
| 8 | Code Review 2: Implementation Project | 150 | 15% |
| 10 | System Presentation Evaluation | 100 | 10% |
| Total | | 1000 | 100% |

# Your Grades for this Course

Your final grade for this course will be based on an assessment by the Instructor of your performance on a number of course activities, which may include objective tests, classroom exercises, laboratory demonstrations, project papers, or other types of activities. The chart below indicates in what activities you will engage, how many possible points can be earned for each activity, and the percentage of your final grade that will be accounted for by each activity.

Students in this course should be graded following Coleman University assessment practices and policies. A point system is used in the University to indicate student performance on various required activities or projects. For this course, it is recommended that points be distributed as follows:

**Coleman University Grade Assignment Policy:**

| Percent | Letter Grade | Grade Points |
|---|---|---|
| 94-100 | A | 4 |
| 90-93 | A- | 3.67 |
| 87-89 | B+ | 3.33 |
| 84-86 | B | 3 |
| 80-83 | B- | 2.67 |
| 77-79 | C+ | 2.33 |
| 74-76 | C | 2 |
| 70-73 | C- | 1.67 |
| 67-69 | D+ | 1.33 |
| 64-66 | D | 1 |
| 60-63 | D- | 0.67 |
| N/A | INC | 0 |
| N/A | W | 0 |
| 60 or above | CR | 0 |
| 59 or below | NC | 0 |
| N/A | I | 0 |
| N/A | W | 0 |
| N/A | AU | 0 |
| N/A | TR | 0 |
| N/A | WV | 0 |

| Legend | |
|---|---|
| CR = Credit | NC = No Credit |
| I = Incomplete | W = Course Withdrawal |
| AU = Audit | TR = Transfer Credit |

| | |
|---|---|
| WV = Waiver | |

## Academic Accommodation / Adjustment Policy:

In accordance with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act (ADA), Coleman University offers accommodations to students with documented physical, psychological, and/or cognitive disabilities. Coleman University will adhere to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodations as required to offer equal educational opportunities to qualified disabled individuals.

To qualify for an academic accommodation under ADA, the student must provide adequate documentation of a disability. Students seeking academic accommodations should contact the campus ADA Coordinator at 858-966-3953 or via email at ada@coleman.edu. The ADA Coordinator will review the documentation provided and verify ADA coverage. Students covered under ADA must meet with the ADA Coordinator at the beginning of every term to determine the appropriate academic accommodations. Failing to meet with the ADA Coordinator at the beginning of every term may impact the availability of accommodations.

After the academic accommodations have been determined, the students' instructors will be notified by the ADA Coordinator. If any problems or concerns regarding the provision of accommodations occur, the student must inform the ADA Coordinator. If the student feels accommodation is not being made appropriately, the student may follow the published Student Grievance Procedures.