

**Kingdom of Saudi Arabia**

**The National Commission for Academic Accreditation & Assessment**

**COURSE SPECIFICATION**

**NCAAA Handbook 2, Draft, March 2008**

**Generated By: Accreditation Integration and Management Systems (AIMS)**

**Faculty of Computing and Information Technology  
King Abdulaziz University**

**Revised**

**October 2011**

# Course Specification

Institution	King Abdulaziz University
College / Department	Faculty of Computing and Information Technology / Computer Science

## A - Course Identification and General Information

<b>1 - Course Title and code:</b>
Programming (I) / CPCS-202
<b>2 - Credit hours:</b>
3
<b>3 - Program in which the course is offered:</b>
B.S.Computer Science
<b>4 - Name of Faculty member responsible for the course</b>
Dr. Daniyal Muhammad Alghazzawi
<b>5 - Level/year at which this course is offered</b>
Sophomore - 200
<b>6 - Co-requisites for this course (if any)</b>
<b>7 - Pre-requisites for this course (if any)</b>
CPIT-201
<b>8 - Location if not offered in main campus</b>
Boys - Sulimania , Girls - Sulimania , Girls - Faisalia , Boys - North Jeddah , Girls - North Jeddah

## B - Objectives

<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>
1 To be familiar with the of programming fundamentals and thinking.
2 To be able to describe program to solve problems.
3 To be able to write a computer program to solve simple problems.
<b>2 - Briefly describe any plans for developing and improving the course that are being implemented.</b>

**C - Course Description** ( Note: General description in the form to be used for the Bulletin or Handbook should be attached)

**1 - Topics to be Covered:**

This course aims to provide students with the fundamental concepts of Programming. It teaches them how to write programs to solve simple problems and how to use the Programming Techniques to solve scientific and practical problems.

**2 - Course components (total contact hours per semester):**

Lecture:	Tutorial:	Practical/Fieldwork/Internship	Other
3	1	0	

**3 - Additional private study/learning hours expected for students per week. (This should be an average for the semester not a specific requirement in each week):**

**4 - Development of Learning Outcomes in Domains of Learning**

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.

**a. Knowledge**

**(i) Description of the knowledge to be acquired**

**(ii) Teaching strategies to be used to develop that knowledge**

**(iii) Methods of assessment of knowledge acquired**

**b. Cognitive Skills**

**(i) Cognitive skills to be developed**

**(ii) Teaching strategies to be used to develop these cognitive skills.**

**(iii) Methodes of assessment of student's cognitive skills.**

**c. Interpersonal Skills and Responsibility**

**(i) Description of the interpersonal skills and capacity to carry responsibility to be developed.**

**(ii) Teaching strategies to be used to develop these skills and abilities**

**(iii) Methods of assessment of student's interpersonal skills and capacity to carry responsibility**

**d. Communication, Information Technology and Numerical Skills.**

**(i) Description of the skills to be developed in this domain.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's numerical and communication skills.**

**e. Psychomotor Skills (if applicable)**

**(i) Description of the psychomotor skills to be developed and level of performance required.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's psychomotor skills.**

## 5 - Schedule of Assessment Tasks for Students During the Semester

Assessment	Assessment task (eg. essay, test, group project, examination, etc)	Week due	Proportion of final Assessment

## D. Student Support

1 - Arrangements for availability of faculty for individual student consultations and academic advice. (include amount of time faculty are available each week)

## E. Learning Resources

<b>1 - Required Text(s).</b> Liang , "Introduction to Java Programming, Comprehensive", Prentice Hall; 8 edition (January 13, 2010) ISBN-13 9780132130806 ISBN-10 0132130807
<b>2 - Essential References</b> Liang , "Introduction to Java Programming, Comprehensive", Prentice Hall; 8 edition (January 13, 2010) ISBN-13 9780132130806 ISBN-10 0132130807
<b>3 - Recommended Books and Reference Material (Journals, Reports, ets) (Attach List)</b>
<b>4 - Electronic Materials, Web Sites etc.</b>
<b>5 - Other Learning material such as computer-based programs/CD, professional standards/regulations</b>

## F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)
<b>1. Accommodation (Lecture rooms, laboratories, etc.)</b>
<b>2. Computing resources</b>
<b>3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)</b>

## **G . Course Evaluation and Improvement Processes**

<b>1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching</b>
<b>2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department</b>
<b>3 Processes for Improvement of Teaching</b>
<b>4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)</b>
<b>5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.</b>

# Course Specification

Institution	King Abdulaziz University
College / Department	Faculty of Computing and Information Technology / Computer Science

## A - Course Identification and General Information

<b>1 - Course Title and code:</b>	Programming (II) / CPCS-203
<b>2 - Credit hours:</b>	3
<b>3 - Program in which the course is offered:</b>	B.S.Computer Science
<b>4 - Name of Faculty member responsible for the course</b>	Dr. Ahmad Saeed Alzahrani
<b>5 - Level/year at which this course is offered</b>	Sophomore - 200
<b>6 - Co-requisites for this course (if any)</b>	
<b>7 - Pre-requisites for this course (if any)</b>	CPIT-203
<b>8 - Location if not offered in main campus</b>	Boys - Sulimania , Girls - Sulimania , Girls - Faisalia , Boys - North Jeddah , Girls - North Jeddah

## B - Objectives

<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>
1 Define basic components of object-oriented programming and standard five-step approach to software development using object-oriented paradigm.
2 Distinguish between classes, objects and instance methods.
3 Define Java programming language constructs to create Java applications.
4 Describe use of predefined (standard) classes from the Java standard library.
5 Identify Primitive types, operators, expressions to write arithmetic expressions in Java.
6 Define Classes Issues related to writing classes data members and methods, such as instance data, visibility, scope, constructors and object relationships.
7 Distinguish private and public data members and methods.
8 Model the real world problem into Object Oriented requirements specification.
9 Illustrate control structure constructs (selection and loops) to dictate program flow.
10 Examine how objects are compared.
11 State the Informal Design and Guidelines for building objects and its relationship with classes and methods.
12 Apply encapsulation for information hiding.
13 Discuss methods overloading and constructor overloading.
14 Illustrate the process of organizing classes in package and Documentation of classes using javadoc comments.

<b>1 - Summary of the main learning outcomes for students enrolled in the course</b>	
15	Identify exceptions, its types and causes in a program.
16	Apply exception handling and assertions techniques in a program.
17	Distinguish the checked and unchecked exceptions
18	Demonstrate the use of arrays of objects for object creation and maintenance.
19	Illustrate Lists and maps as a more general and flexible way to maintain a collection of data.
20	Define Inheritance and its role in software design and reusability.
21	Differentiate the abstract classes and Java interfaces.
22	List advantages of inheritance.
23	Illustrate File Input and Output operation in java.
24	Design and implement a full real life system using the Object Oriented Programming techniques.
<b>2 - Briefly describe any plans for developing and improving the course that are being implemented.</b>	

**C - Course Description** ( Note: General description in the form to be used for the Bulletin or Handbook should be attached)

<b>1 - Topics to be Covered:</b>
CPCS-203 (Programming II) represent the second core programming course in the faculty curriculum. This course is intended to cover the basics and intermediate concepts of Object Oriented Programming using Java. The topics included are Numerical Data, primitive data type, Selection Statements, Repetition Statements, Class, standard classes, Object, instance of a class, Object Oriented Programming, Software Development, Constructor, methods, call by values, call by reference, UML, state memory diagram, class diagram, arrays, method overloading, constructor overloading, overriding, this, new, exception and assertions, Inheritance, encapsulation, data abstraction, private, public, protected, exception, inheritance, abstract class, polymorphism, file handling.

<b>2 - Course components (total contact hours per semester):</b>			
Lecture:	Tutorial:	Practical/Fieldwork/Internship	Other
3	1	0	

<b>3 - Additional private study/learning hours expected for students per week. (This should be an average for the semester not a specific requirement in each week):</b>

<b>4 - Development of Learning Outcomes in Domains of Learning</b>
For each of the domains of learning shown below indicate:
- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.
<b>a. Knowledge</b>
<b>(i) Description of the knowledge to be acquired</b>
Introduction to Object Oriented Programming and Software Development.
Getting Started with Java
Numerical Data
Defining Your Own Classes – Part 1
Repetition Statements
Selection Statements
Defining Your Own Classes Part 2
Exception and Assertions
Arrays
Inheritance and Polymorphism



#### 4 - Development of Learning Outcomes in Domains of Learning

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.

##### a. Knowledge

###### File Input and Output

###### (ii) Teaching strategies to be used to develop that knowledge

###### Lab

During the lab sessions, students will solve problems that will enable them to gain experience needed to reach the cognitive learning ability of analyzing and evaluating the given material and hence meet the course learning objective. Students will develop programming and problem solving skills through a variety of assignments that explore the use of Object Oriented techniques using the Java programming language. Students will learn about the concepts of classes and objects and the principles of object orientation. Testing and debugging techniques, the development of sound programming logic, and the writing of well-structured code are also emphasized. The lab instructor/ demonstrator will maintain the lab manual and guide the students during the lab sessions.

###### Lecture

Instructor will teach the topics of the course emphasizing on related course learning outcomes (CLOs), while student will take notes and read in the text book. Student learning outcomes will be measured by lab test, project report, Quizzes, mid-term exams and final exam. Students will take two mid-term exams at a pre-announced time. The exam will be discussed in class to highlight on the common mistakes that have been appeared in the answer sheets to insure that the learning outcomes are fulfilled. At the end of the semester there will be one major final exam that would cover all the main topics of the course.

###### (iii) Methods of assessment of knowledge acquired

1	Final Exam
2	Midterm Exam 1
3	Midterm Exam 2
4	Quiz
5	Lab Test
6	Project Report

##### b. Cognitive Skills

###### (i) Cognitive skills to be developed

###### (ii) Teaching strategies to be used to develop these cognitive skills.

###### (iii) Methodes of assessment of student's cognitive skills.

**c. Interpersonal Skills and Responsibility**

**(i) Description of the interpersonal skills and capacity to carry responsibility to be developed.**

**(ii) Teaching strategies to be used to develop these skills and abilities**

**(iii) Methods of assessment of student's interpersonal skills and capacity to carry responsibility**

**d. Communication, Information Technology and Numerical Skills.**

**(i) Description of the skills to be developed in this domain.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's numerical and communication skills.**

**e. Psychomotor Skills (if applicable)**

**(i) Description of the psychomotor skills to be developed and level of performance required.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's psychomotor skills.**

## 5 - Schedule of Assessment Tasks for Students During the Semester

Assessment	Assessment task (eg. essay, test, group project, examination, etc)	Week due	Proportion of final Assessment
1	Final Exam		30
2	Midterm Exam 1		15
3	Midterm Exam 2		15
4	Quiz		5
5	Lab Test		25
6	Project Report		10

### D. Student Support

**1 - Arrangements for availability of faculty for individual student consultations and academic advice. (include amount of time faculty are available each week)**

### E. Learning Resources

<b>1 - Required Text(s).</b> Wu, "An Introduction to Object-Oriented Programming with Java an Introduction to Object-Oriented Programming with Java", McGraw-Hill Higher Education; 4th edition (February 2008) ISBN-13 9780071116817 ISBN-10 0071116818
<b>2 - Essential References</b> Wu, "An Introduction to Object-Oriented Programming with Java an Introduction to Object-Oriented Programming with Java", McGraw-Hill Higher Education; 4th edition (February 2008) ISBN-13 9780071116817 ISBN-10 0071116818
<b>3 - Recommended Books and Reference Material (Journals, Reports, ets) (Attach List)</b>
<b>4 - Electronic Materials, Web Sites etc.</b>
<b>5 - Other Learning material such as computer-based programs/CD, professional standards/regulations</b>

### F. Facilities Required

<b>Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)</b>
<b>1. Accommodation (Lecture rooms, laboratories, etc.)</b>
<b>2. Computing resources</b>
<b>3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)</b>

## **G . Course Evaluation and Improvement Processes**

<b>1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching</b>
<b>2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department</b>
<b>3 Processes for Improvement of Teaching</b>
<b>4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)</b>
<b>5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.</b>

# Course Specification

Institution	King Abdulaziz University
College / Department	Faculty of Computing and Information Technology / Computer Science

## A - Course Identification and General Information

<b>1 - Course Title and code:</b>
Data Structures (I) / CPCS-204
<b>2 - Credit hours:</b>
3
<b>3 - Program in which the course is offered:</b>
B.S.Computer Science
<b>4 - Name of Faculty member responsible for the course</b>
Dr. Imtiaz Hussain Khan
<b>5 - Level/year at which this course is offered</b>
Sophomore - 200
<b>6 - Co-requisites for this course (if any)</b>
<b>7 - Pre-requisites for this course (if any)</b>
CPCS-203
<b>8 - Location if not offered in main campus</b>
Boys - Sulimania , Girls - Sulimania , Girls - Faisalia , Boys - North Jeddah , Girls - North Jeddah

## B - Objectives

<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>
1 Write simple algorithms using pseudo-code notation.
2 Distinguish between experimental and theoretical approaches to algorithm analysis.
3 Analyse the performance of simple algorithms using Big-O.
4 Distinguish between static and dynamic data structures.
5 Implement basic operations on linked lists, including add/ remove node operations.
6 Apply sequential and binary search algorithms in problem solving.
7 Trace the above searching algorithms.
8 Implement the above searching algorithms as programs (in Java language).
9 Apply basic sorting algorithms, including bubble sort and insertion sort, in problem solving.
10 Trace the above sorting algorithms.
11 Implement the above sorting algorithms as programs (in Java language).
12 Describe the divide-and-conquer approach.
13 Trace recursive algorithms.
14 Apply recursion to solve simple problems, including factorial of a number.
15 Explain merge- and quick-sort algorithms.
16 Trace the output of merge- and quick-sort algorithms on a given unsorted list.

<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>	
17	Build abstract data types.
18	Explain the difference between stacks and queues.
19	Perform basic stack operations, including push and pop.
20	Perform basic queue operations, including enqueue and dequeue.
21	Apply stacks to solve specific problems.
22	Apply queues to solve specific problems.
23	Implement stacks as programs (in Java language).
24	Implement queues as programs (in Java language).
25	Describe different tree terminologies.
26	Explain the difference between different tree traversal algorithms.
27	Trace the output of different tree traversal algorithms.
28	Work in groups.
<b>2 - Briefly describe any plans for developing and improving the course that are being implemented.</b>	

**C - Course Description** ( Note: General description in the form to be used for the Bulletin or Handbook should be attached)

<b>1 - Topics to be Covered:</b>
<p>This course is an introduction to data structures that intends to train students for problem solving by using simple data structures and developing algorithms. The students will mainly learn static and dynamic data structures, including arrays, linked lists, stacks, queues and trees. They will also learn some basic searching and sorting algorithms and algorithm analysis tools, particularly “Big O”.</p>

<b>2 - Course components (total contact hours per semester):</b>			
Lecture:	Tutorial:	Practical/Fieldwork/Internship	Other
3	1	0	

<b>3 - Additional private study/learning hours expected for students per week. (This should be an average for the semester not a specific requirement in each week):</b>

<b>4 - Development of Learning Outcomes in Domains of Learning</b>
For each of the domains of learning shown below indicate:
- A brief summary of the knowledge or skill the course is intended to develop;
- Adescription of the teaching strategies to be used in the curse to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evalute learning outcomes in the domain concerned.

<b>a. Knowledge</b>
<b>(i) Description of the knowledge to be acquired</b>
Introduction to algorithms and algorithm analysis
Static data structures
Basic searching and sorting algorithms
Recursion and recursive sort
Abstarct data types
Dynamic data structures
Stacks and queues
An overview of trees

**4 - Development of Learning Outcomes in Domains of Learning**

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.

**a. Knowledge****(ii) Teaching strategies to be used to develop that knowledge****Lectures**

Instructor will teach the topics of the course emphasizing on related course learning outcomes (CLOs), using multimedia aid. Students will be provided with the lecture slides and will be encouraged to read the selected topics from the text book, and occasionally from the Web. The course learning outcomes will be measured by quizzes, lab and homework assignments (individual), two sessionals tests and one final exam. The solutions to the quizzes and sessional tests will be discussed in the class. Occasionally, the instructor will bring selected problem sets and solve them on the board in an interactive session, whereby various possible solutions to the problem will be discussed. The latter activity is expected to enhance the creativity and analytical skills of the students.

**Labs/Tutorials**

During the lab sessions, the students will be required to apply the algorithms and transform them to working (Java) programs, for the given problem(s). The lab instructor/ demonstrator will maintain the lab manual and guide the students during the lab sessions. Occasionally, the lab instructor will also bring selected programming problem sets and provide a dry-run on the board.

**Class participation**

Students' attendance and class participation will be continuously monitored and will be reflected in their final grades.

**(iii) Methods of assessment of knowledge acquired**

1	Final Exam
2	Sessional test # 1
3	Sessional test # 2
4	Quiz # 1
5	Quiz # 2
6	Quiz # 3
7	Quiz # 4
8	Practical Exam
9	Programming Project
10	Class Participation

**b. Cognitive Skills****(i) Cognitive skills to be developed****(ii) Teaching strategies to be used to develop these cognitive skills.****(iii) Methodes of assessment of student's cognitive skills.**

**c. Interpersonal Skills and Responsibility**

**(i) Description of the interpersonal skills and capacity to carry responsibility to be developed.**

**(ii) Teaching strategies to be used to develop these skills and abilities**

**(iii) Methods of assessment of student's interpersonal skills and capacity to carry responsibility**

**d. Communication, Information Technology and Numerical Skills.**

**(i) Description of the skills to be developed in this domain.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's numerical and communication skills.**

**e. Psychomotor Skills (if applicable)**

**(i) Description of the psychomotor skills to be developed and level of performance required.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's psychomotor skills.**



## 5 - Schedule of Assessment Tasks for Students During the Semester

Assessment	Assessment task (eg. essay, test, group project, examination, etc)	Week due	Proportion of final Assessment
1	Final Exam		30
2	Sessional test # 1		10
3	Sessional test # 2		15
4	Quiz # 1		2.5
5	Quiz # 2		2.5
6	Quiz # 3		2.5
7	Quiz # 4		2.5
8	Practical Exam		20
9	Programming Project		10
10	Class Participation		5

### D. Student Support

**1 - Arrangements for availability of faculty for individual student consultations and academic advice. (include amount of time faculty are available each week)**

### E. Learning Resources

#### 1 - Required Text(s).

Hubbard, "Schaum's Outline of Data Structures with Java, 2ed (Schaum's Outline Series)", McGraw-Hill; 2 edition (May 26, 2009)

ISBN-13 9780071611619 ISBN-10 0071611614

#### 2 - Essential References

Hubbard, "Schaum's Outline of Data Structures with Java, 2ed (Schaum's Outline Series)", McGraw-Hill; 2 edition (May 26, 2009)

ISBN-13 9780071611619 ISBN-10 0071611614

#### 3 - Recommended Books and Reference Material (Journals, Reports, ets) (Attach List)

#### 4 - Electronic Materials, Web Sites etc.

#### 5 - Other Learning material such as computer-based programs/CD, professional standards/regulations

### F. Facilities Required

**Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)**

**1. Accommodation (Lecture rooms, laboratories, etc.)**

**2. Computing resources**

**3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)**

## **G . Course Evaluation and Improvement Processes**

<b>1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching</b>
<b>2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department</b>
<b>3 Processes for Improvement of Teaching</b>
<b>4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)</b>
<b>5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.</b>

# Course Specification

Institution	King Abdulaziz University
College / Department	Faculty of Computing and Information Technology / Computer Science

## A - Course Identification and General Information

<b>1 - Course Title and code:</b>
Digital Logic Design / CPCS-211
<b>2 - Credit hours:</b>
3
<b>3 - Program in which the course is offered:</b>
B.S.Computer Science
<b>4 - Name of Faculty member responsible for the course</b>
Prof. Fadi Fouad Fouz
<b>5 - Level/year at which this course is offered</b>
Sophomore - 200
<b>6 - Co-requisites for this course (if any)</b>
<b>7 - Pre-requisites for this course (if any)</b>
CPIT-201
<b>8 - Location if not offered in main campus</b>
Boys - Sulimania , Girls - Sulimania , Girls - Faisalia , Boys - North Jeddah , Girls - North Jeddah

## B - Objectives

<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>
1 Represent numeric data using binary, octal, and hexadecimal number systems.
2 Represent numeric data using BCD and ASCII codes.
3 Convert numeric data represented in decimal to binary, octal, or hexadecimal, and vice versa.
4 Represent alphanumeric data using ASCII code.
5 Perform basic arithmetic operations in binary system.
6 Represent signed numbers using signed magnitude, one's complement, or two's complement representation.
7 Define switching algebra,
8 List basic properties of switching algebra.
9 Manipulate algebraic functions.

<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>	
10	Simplify algebraic expressions
11	Define combinational systems.
12	Identify don't care conditions.
13	Write the truth table for verbally defined combinational system.
14	Define AND, OR, NOT, NAND, NOR, EX-OR, EX-NOR gates.
15	Define sum of products (SOP) and product of sums (POS) expressions.
16	Implement algebraic expressions using AND-OR-NOT gates.
17	Implement algebraic expressions using OR-AND-NOT gates.
18	Implement algebraic expressions using NAND gates only.
19	Implement algebraic expressions using NOR gates only.
20	Derive sum of products (SOP) expression from the truth table.
21	Derive product of sums (POS) expression from the truth table.
22	Derive the complement of a function.
23	Define Karnaugh map for 2, 3, 4, 5, 6, variables.
24	Demonstrate the use of Karnaugh map to simplify functions.
25	Design single and multiple outputs combinational systems.
26	Implement combinational systems with Read-Only-Memory (ROM).
27	Implement combinational systems with Programmable Logic Arrays (PLA).
28	Implement combinational systems with Programmable Array Logic (PAL).
29	Describe half and full adders.
30	Construct parallel adders and subtractors.
31	Describe binary decoders and encoders.
32	Implement logic functions using decoders.
33	Describe Multiplexers and Demultiplexers.
34	Implement logic functions using Multiplexers.
35	Describe comparators.
36	Define sequential systems.
37	Describe latches and different types of flip flops.
38	Illustrate sequential systems and flip flops design techniques.

<b>1 - Summary of the main learning outcomes for students enrolled in the course</b>	
39	Design of asynchronous counters.
40	Design of synchronous counters,
41	Describe different types of counters.
42	Describe different types of shift registers.
43	Analyze sequential systems.
<b>2 - Briefly describe any plans for developing and improving the course that are being implemented.</b>	

**C - Course Description** ( Note: General description in the form to be used for the Bulletin or Handbook should be attached)

<b>1 - Topics to be Covered:</b>
A review of Number Systems, The design process for Combinational Systems, Don't Care Conditions, The development of Truth Tables, Definition of Switching Algebra, Basic Properties of switching algebra, Manipulation of algebraic functions, Implementation of Functions with AND, OR, and NOT Gates, Deriving Algebraic Expressions From the Truth Table, Introduction to Karnaugh Map, The Complement, the Sum of Products, and the Product of Sums, NAND, NOR, and Exclusive-OR Gates, Simplification of Algebraic Expressions, Manipulation of Algebraic Functions, NOR and NAND Gates Implementations, Minimum Sum of Product Expression, Using Karnaugh Map, Don't Cares, Minimum Product of Sums Expression, Minimum Cost Gate Implementation, Five- and six-variable Maps, Multiple output Problems, Delay in Combinational Systems, Adder and Other Combinational circuits, Decoders, Encoders and Priority Encoders, Multiplexers, Three-State Gates, Gate-Arrays- ROMs, PLAs, and PALs, State Tables and Diagrams, Latches and Flip Flops, Analysis of Sequential Systems, Flip Flop Design Techniques, The design of Synchronous Counters, Design of Asynchronous Counters, Derivation of State Tables and State diagrams, Shift Registers, Counters.

<b>2 - Course components (total contact hours per semester):</b>			
Lecture:	Tutorial:	Practical/Fieldwork/Internship	Other
3	1	0	

<b>3 - Additional private study/learning hours expected for students per week. (This should be an average for the semester not a specific requirement in each week):</b>

<b>4 - Development of Learning Outcomes in Domains of Learning</b>
For each of the domains of learning shown below indicate:
- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.
<b>a. Knowledge</b>
<b>(i) Description of the knowledge to be acquired</b>
Introduction
Switching Algebra & Logic circuits
The Karnaugh Map
Larger Combinational Circuits
Analysis of Sequential Systems
The Design of Sequential Systems
Larger Sequential Systems

#### 4 - Development of Learning Outcomes in Domains of Learning

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.

##### a. Knowledge

###### (ii) Teaching strategies to be used to develop that knowledge

###### lectures

Instructor will teach the topics of the course emphasizing on the course related learning objectives through two eighty minutes lecture meetings per week. Lectures will; in most cases, have a mix of formal lecturing and active learning.

###### tutorials

During the tutorials (one 100 minutes meeting per week), the instructor will solve example problems related to the recently introduced topic. The instructor will also discuss with the students the problems they faced while trying to solve the assigned homework problems. Some of the tutorials are devoted for training the students on a software package needed in the course

###### project

A final project is assigned at the end of the semester. It involves the implementation of design theory, and the use of a simulation package to develop a complex digital circuit. Each student should submit a report and give a presentation of his work.

###### (iii) Methods of assessment of knowledge acquired

1	Final Exam
2	Midterm Exam
3	Test
4	Lab Test
5	Project Report

##### b. Cognitive Skills

###### (i) Cognitive skills to be developed

###### (ii) Teaching strategies to be used to develop these cognitive skills.

###### (iii) Methodes of assessment of student's cognitive skills.

**c. Interpersonal Skills and Responsibility**

**(i) Description of the interpersonal skills and capacity to carry responsibility to be developed.**

**(ii) Teaching strategies to be used to develop these skills and abilities**

**(iii) Methods of assessment of student's interpersonal skills and capacity to carry responsibility**

**d. Communication, Information Technology and Numerical Skills.**

**(i) Description of the skills to be developed in this domain.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's numerical and communication skills.**

**e. Psychomotor Skills (if applicable)**

**(i) Description of the psychomotor skills to be developed and level of performance required.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's psychomotor skills.**

## 5 - Schedule of Assessment Tasks for Students During the Semester

Assessment	Assessment task (eg. essay, test, group project, examination, etc)	Week due	Proportion of final Assessment
1	Final Exam		40
2	Midterm Exam		20
3	Test		10
4	Lab Test		10
5	Project Report		20

### D. Student Support

1 - Arrangements for availability of faculty for individual student consultations and academic advice. (include amount of time faculty are available each week)

### E. Learning Resources

<b>1 - Required Text(s).</b> Marcovitz, "Introduction to Logic Design", Tata Mcgraw Hill; 2nd Edition (January 1, 2005) ISBN-13 9780070598997 ISBN-10 0070598991
<b>2 - Essential References</b> Marcovitz, "Introduction to Logic Design", Tata Mcgraw Hill; 2nd Edition (January 1, 2005) ISBN-13 9780070598997 ISBN-10 0070598991
<b>3 - Recommended Books and Reference Material (Journals, Reports, ets) (Attach List)</b>
<b>4 - Electronic Materials, Web Sites etc.</b>
<b>5 - Other Learning material such as computer-based programs/CD, professional standards/regulations</b>

### F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)
<b>1. Accommodation (Lecture rooms, laboratories, etc.)</b>
<b>2. Computing resources</b>
<b>3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)</b>



## **G . Course Evaluation and Improvement Processes**

<b>1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching</b>
<b>2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department</b>
<b>3 Processes for Improvement of Teaching</b>
<b>4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)</b>
<b>5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.</b>

# Course Specification

Institution	King Abdulaziz University
College / Department	Faculty of Computing and Information Technology / Computer Science

## A - Course Identification and General Information

<b>1 - Course Title and code:</b>	Applied Math for Computing (I) / CPCS-212
<b>2 - Credit hours:</b>	4
<b>3 - Program in which the course is offered:</b>	B.S.Computer Science
<b>4 - Name of Faculty member responsible for the course</b>	Dr. Anas Muhammad Fattouh
<b>5 - Level/year at which this course is offered</b>	Sophomore - 200
<b>6 - Co-requisites for this course (if any)</b>	
<b>7 - Pre-requisites for this course (if any)</b>	MATH- 202
<b>8 - Location if not offered in main campus</b>	Boys - Sulimania , Girls - Sulimania , Girls - Faisalia , Boys - North Jeddah , Girls - North Jeddah

## B - Objectives

<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>
1 Recognize basic data structures in Matlab.
2 Recognize basic matrix mathematics in Matlab.
3 State techniques for plotting data in Matlab.
4 State programming fundamentals in Matlab.
5 Describe the idea of a numerical method (Bisection method, Newton method, Secant method) to locate roots of an algebraic equation.
6 Apply a numerical method (Bisection method, Newton method, Secant method) to locate roots of an algebraic equation.
7 Produce a program for a numerical method (Bisection method, Newton method, Secant method) to locate roots of an algebraic equation in Matlab.
8 State techniques for plotting data in Matlab.
9 State programming fundamentals in Matlab.
10 Describe the idea of a numerical method (Bisection method, Newton method, Secant method) to locate roots of an algebraic equation.
11 Apply a numerical method (Bisection method, Newton method, Secant method) to locate roots of an algebraic equation.
12 Produce a program for a numerical method (Bisection method, Newton method, Secant method) to locate roots of an algebraic equation in Matlab.
13 Describe the idea of a numerical method (Gaussian elimination method, Gaussian elimination with scaled partial pivoting

<b>1 - Summary of the main learning outcomes for students enrolled in the course</b>	
14	Apply a numerical method (Gaussian elimination method, Gaussian elimination with scaled partial pivoting method) to solve a system of linear equations.
15	Produce a program for a numerical method (Gaussian elimination method, Gaussian elimination with scaled partial pivoting method) to solve a system of linear equations in Matlab.
16	Describe the idea of a numerical method (Upper and lower sums, Newton-Cotes methods) to find the numerical integration of a function.
17	Apply a numerical method (Upper and lower sums, Newton-Cotes methods) to find the numerical integration of a function.
18	Produce a program for a numerical method (Upper and lower sums, Newton-Cotes methods) to find the numerical integration of a function in Matlab.
19	Describe the idea of a numerical method (difference method) to find the numerical differentiation of a function.
20	Apply a numerical method (difference method) to find the numerical differentiation of a function.
21	Produce a program for a numerical method (difference method) to find the numerical differentiation of a function in Matlab.
22	Describe the idea of a numerical method (Euler method, Runge-Kutta method) to solve a differential equation.
23	Apply a numerical method (Euler method, Runge-Kutta method) to solve a differential equation.
24	Produce a program for a numerical method (Euler method, Runge-Kutta method) to solve a differential equation in Matlab.
<b>2 - Briefly describe any plans for developing and improving the course that are being implemented.</b>	

**C - Course Description** ( Note: General description in the form to be used for the Bulletin or Handbook should be attached)

<b>1 - Topics to be Covered:</b>
This is the third course on mathematics for computer science major. This course is designed to familiarize the students with the basic concepts of applied mathematics used in computer science. Major topics to be covered in this course include: Matlab: Matrices and Arrays, Matlab: Graphics, Matlab: Programming, Solution of Nonlinear Equations, Solution of Systems of Linear Equations, Numerical Integration, Numerical Differentiation, and Ordinary Differential Equations.

<b>2 - Course components (total contact hours per semester):</b>			
Lecture:	Tutorial:	Practical/Fieldwork/Internship	Other
3	2	0	

<b>3 - Additional private study/learning hours expected for students per week. (This should be an average for the semester not a specific requirement in each week):</b>

<b>4 - Development of Learning Outcomes in Domains of Learning</b>
For each of the domains of learning shown below indicate:
- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.
<b>a. Knowledge</b>
<b>(i) Description of the knowledge to be acquired</b>
Matlab: Matrices and Arrays
Matlab: Graphics
Matlab: Programming
Solution of Nonlinear Equations
Solution of Systems of Linear Equations
Numerical Integration
Numerical Differentiation
Ordinary Differential Equations

#### 4 - Development of Learning Outcomes in Domains of Learning

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.

##### a. Knowledge

###### (ii) Teaching strategies to be used to develop that knowledge

###### Lectures

- Instructor teaches the topics of the course using slides published on his website before the lecture session and the students take notes and discuss with the instructor.
- When the instructor finishes a topic he solves and programs real-world problems related to the covered topic.
- Student learning outcomes related to the topics covered in the lecture sessions are measured by homework assignments, two tests, and final exam.
- Four homework problems related to the application of numerical methods in solving real-world problems are assigned in the lecture sessions during the semester.
- Students will take two tests during the semester at a pre-announced time. These tests will cover the topics given up to the date of the test.
- The model answer for each of the homework and test is presented in a lecture session for the students to check their answers with and to ensure that the learning objectives are fulfilled.
- At the end of the semester there will be one major final exam that would cover all the main topics of the course.

###### Lab

- During the lab session, topics covered in lecture sessions are programmed in Matlab and some related problems are solved.
- Student learning outcomes related to topics covered in lab sessions are measured by lab homework assignments and lab test.
- Two homework problems related to programming topics in Matlab will be assigned in the lab sessions during the semester.
- The model answer for each of the homework will be presented in the next lab session for the students to check their answers with and to ensure that the learning objectives are fulfilled.
- At the end of the semester there will be one lab test that would cover all the main topics of the course.

###### (iii) Methods of assessment of knowledge acquired

1	Final Exam
2	Test 1
3	Test 2
4	Lab Homework 1
5	Lab Homework 2
6	Homework 1
7	Homework 2
8	Homework 3
9	Homework 4
10	Lab Test

##### b. Cognitive Skills

###### (i) Cognitive skills to be developed

###### (ii) Teaching strategies to be used to develop these cognitive skills.

###### (iii) Methodes of assessment of student's cognitive skills.

**c. Interpersonal Skills and Responsibility**

**(i) Description of the interpersonal skills and capacity to carry responsibility to be developed.**

**(ii) Teaching strategies to be used to develop these skills and abilities**

**(iii) Methods of assessment of student's interpersonal skills and capacity to carry responsibility**

**d. Communication, Information Technology and Numerical Skills.**

**(i) Description of the skills to be developed in this domain.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's numerical and communication skills.**

**e. Psychomotor Skills (if applicable)**

**(i) Description of the psychomotor skills to be developed and level of performance required.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's psychomotor skills.**

## 5 - Schedule of Assessment Tasks for Students During the Semester

Assessment	Assessment task (eg. essay, test, group project, examination, etc)	Week due	Proportion of final Assessment
1	Final Exam		40
2	Test 1		10
3	Test 2		10
4	Lab Homework 1		5
5	Lab Homework 2		5
6	Homework 1		5
7	Homework 2		5
8	Homework 3		5
9	Homework 4		5
10	Lab Test		10

### D. Student Support

**1 - Arrangements for availability of faculty for individual student consultations and academic advice. (include amount of time faculty are available each week)**

### E. Learning Resources

#### 1 - Required Text(s).

Recktenwald, "Introduction to Numerical Methods and Mat lab: Implementation and Application", Prentice Hall; 2nd Edition (September 3, 2000)  
ISBN-13 9780201308600 ISBN-10 0201308606

#### 2 - Essential References

Recktenwald, "Introduction to Numerical Methods and Mat lab: Implementation and Application", Prentice Hall; 2nd Edition (September 3, 2000)  
ISBN-13 9780201308600 ISBN-10 0201308606

#### 3 - Recommended Books and Reference Material (Journals, Reports, ets) (Attach List)

#### 4 - Electronic Materials, Web Sites etc.

#### 5 - Other Learning material such as computer-based programs/CD, professional standards/regulations

### F. Facilities Required

**Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)**

**1. Accommodation (Lecture rooms, laboratories, etc.)**

**2. Computing resources**

**3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)**

## **G . Course Evaluation and Improvement Processes**

<b>1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching</b>
<b>2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department</b>
<b>3 Processes for Improvement of Teaching</b>
<b>4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)</b>
<b>5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.</b>

# Course Specification

Institution	King Abdulaziz University
College / Department	Faculty of Computing and Information Technology / Computer Science

## A - Course Identification and General Information

<b>1 - Course Title and code:</b>
Computer Organization and Architecture (I) / CPCS-214
<b>2 - Credit hours:</b>
3
<b>3 - Program in which the course is offered:</b>
B.S.Computer Science
<b>4 - Name of Faculty member responsible for the course</b>
Dr. Muhammad Abdulhamid Alhashimi
<b>5 - Level/year at which this course is offered</b>
Sophomore - 200
<b>6 - Co-requisites for this course (if any)</b>
<b>7 - Pre-requisites for this course (if any)</b>
CPCS-211
<b>8 - Location if not offered in main campus</b>
Boys - Sulimania , Girls - Sulimania , Girls - Faisalia , Boys - North Jeddah , Girls - North Jeddah

## B - Objectives

<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>
1 Compile generic C-based assignments, conditionals, loops, and procedures into MIPS assembly using proper MIPS calling conventions.
2 Describe the principles and decisions used to design MIPS instructions.
3 Write the binary representation for selected MIPS assembly instructions given opcode and register code tables.
4 Trace the execution of a small MIPS program and its supporting data structures.
5 Write simple MIPS assembly program using MIPS software conventions.
6 Examine how hardware interprets and handles a sequence of bits, and the consequences of finite store on representation and operations on integer and real numbers.
7 Determine how typical high level data types are organized in memory.
8 Convert between numbers and their internal bit representation.
9 Identify the design principles, choices and limitations of IEEE 754 representation of real numbers.
10 Perform step-by-step straight cases of floating point addition and multiplication.
11 Explain the function of a clocking signal in computers.
12 Specify the functional definition of various building blocks, pieces, and units used in selected datapath designs.
13 Trace the execution of instructions in the example datapaths.
14 Identify the components of CPU performance based on the CPU performance equation.



<b>1 - Summary of the main learning outcomes for students enrolled in the course</b>	
15	Explain the basic principles behind pipelined execution.
16	Determine control and selected data hazards in a MIPS code fragment.
17	Compute the CPI for a code fragment given selected pipelining scenarios.
18	Compare memory technologies available for computing systems.
19	Give examples of spatial and temporal locality in both data and code (instructions).
20	Explain the basic principle behind a memory hierarchy.
21	Describe the various ways to organize a cache memory.
22	Explain the steps and issues involved in performing reads and writes through cache.
23	Determine the location in cache given a memory address and a cache organization.
24	Calculate the storage requirements of a cache given its size and organization.
25	Calculate memory stall cycles due to cache given cache miss rate and miss penalty.
26	Determine the effects of various cache design parameters on cache performance.
27	Determine the physical address given a virtual address and page size.
28	Describe the steps, structures and issues involved in virtual address translation.
29	Identify the design characteristics and choices involved in page management.
30	Explain the steps and issues involved in page faults.
31	Describe the role of the operating system in managing virtual memory.
32	Identify issues, requirements and challenges involved in designing I/O systems.
33	Explain how dependability can be achieved in a computing system.
34	Describe the characteristics and operation of a typical I/O device (hard disk is selected).
35	Compare shared bus and communication hub-based, point-to-point I/O interconnect systems.
36	Describe the characteristics of communication over typical bus interconnect.
37	Describe the steps and issues involved in completing a program I/O request.
38	Describe the various methods used to address and interface I/O devices.
39	Describe the main goals, issues and difficulties faced by multiprocessors.
40	Compare the characteristics of shared memory and message-passing multiprocessors.
<b>2 - Briefly describe any plans for developing and improving the course that are being implemented.</b>	

**C - Course Description** ( Note: General description in the form to be used for the Bulletin or Handbook should be attached)

<b>1 - Topics to be Covered:</b>
<p>This is a first course on computer organization and architecture for computer science major. The course is intended to explain how computers are designed and how they work. Students are introduced to modern computer principles using a typical processor. They learn how efficient memory systems are designed to work closely with the processor, and how input/output (I/O) systems bring the processor and memory together with a wide range of devices. The course emphasizes system-level issues and understanding program performance. Topics include: assembly, instructions sets, computer arithmetic, processor datapath and control, memory hierarchy, I/O devices and interconnects, and an introduction to parallel processing.</p>

<b>2 - Course components (total contact hours per semester):</b>			
Lecture:	Tutorial:	Practical/Fieldwork/Internship	Other
3	1	0	

<b>3 - Additional private study/learning hours expected for students per week. (This should be an average for the semester not a specific requirement in each week):</b>

**4 - Development of Learning Outcomes in Domains of Learning**

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.

**a. Knowledge****(i) Description of the knowledge to be acquired**

instructions sets and assembly language  
 computer arithmetic  
 processor datapath and control  
 memory hierarchy  
 I/O devices and interconnects  
 an introduction to parallel processing

**(ii) Teaching strategies to be used to develop that knowledge****(iii) Methods of assessment of knowledge acquired**

1	Test
2	Reading discussion assignments
3	Programming lab assignments
4	Final Exam

**b. Cognitive Skills****(i) Cognitive skills to be developed****(ii) Teaching strategies to be used to develop these cognitive skills.****(iii) Methodes of assessment of student's cognitive skills.****c. Interpersonal Skills and Responsibility****(i) Description of the interpersonal skills and capacity to carry responsibility to be developed.****(ii) Teaching strategies to be used to develop these skills and abilities****(iii) Methods of assessment of student's interpersonal skills and capacity to carry responsibility**

**d. Communication, Information Technology and Numerical Skills.**

**(i) Description of the skills to be developed in this domain.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's numerical and communication skills.**

**e. Psychomotor Skills (if applicable)**

**(i) Description of the psychomotor skills to be developed and level of performance required.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's psychomotor skills.**

**5 - Schedule of Assessment Tasks for Students During the Semester**

Assessment	Assessment task (eg. essay, test, group project, examination, etc)	Week due	Proportion of final Assessment
1	Test		40
2	Reading discussion assignments		10
3	Programming lab assignments		10
4	Final Exam		40

**D. Student Support**

**1 - Arrangements for availability of faculty for individual student consultations and academic advice. (include amount of timen faculty are available each week)**

## E. Learning Resources

<b>1 - Required Text(s).</b> Patterson and John L. Hennessy, "Computer Organization and Design: The Hardware/Software Interface", Morgan Kaufmann, 4th Edition, 2008 ISBN-13 9780123744937 ISBN-10 0123744938
<b>2 - Essential References</b> Patterson and John L. Hennessy, "Computer Organization and Design: The Hardware/Software Interface", Morgan Kaufmann, 4th Edition, 2008 ISBN-13 9780123744937 ISBN-10 0123744938
<b>3 - Recommended Books and Reference Material (Journals, Reports, ets) (Attach List)</b>  1 - Carter, "Schaum's Outlines of Computer Architecture", McGraw-Hill, 2002 ISBN13- 9780071362078 ISBN10- 007136207X 2 - Dandamudi, "Guide to RISC Processors for Programmers and Engineers", Springer, 2005 ISBN13- 9780387210179 ISBN10- 0387210172
<b>4 - Electronic Materials, Web Sites etc.</b>
<b>5 - Other Learning material such as computer-based programs/CD, professional standards/regulations</b>

## F. Facilities Required

<b>Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)</b>
<b>1. Accommodation (Lecture rooms, laboratories, etc.)</b>
<b>2. Computing resources</b>
<b>3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)</b>

## G . Course Evaluation and Improvement Processes

<b>1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching</b>
<b>2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department</b>
<b>3 Processes for Improvement of Teaching</b>
<b>4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)</b>
<b>5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.</b>

# Course Specification

Institution	King Abdulaziz University
College / Department	Faculty of Computing and Information Technology / Computer Science

## A - Course Identification and General Information

<b>1 - Course Title and code:</b>
Discrete Structures (I) / CPCS-222
<b>2 - Credit hours:</b>
3
<b>3 - Program in which the course is offered:</b>
B.S.Computer Science
<b>4 - Name of Faculty member responsible for the course</b>
Dr. Faraj Ibrahim Alnajahi
<b>5 - Level/year at which this course is offered</b>
Sophomore - 200
<b>6 - Co-requisites for this course (if any)</b>
<b>7 - Pre-requisites for this course (if any)</b>
<b>8 - Location if not offered in main campus</b>
Boys - Sulimania , Girls - Sulimania , Girls - Faisalia , Boys - North Jeddah , Girls - North Jeddah

## B - Objectives

<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>
1 Use set notation to express sets.
2 Represent a set graphically using Venn diagrams and a computer.
3 Find the cardinality and the power set for a given set.
4 Find the Cartesian product, union, intersection, and difference of sets.
5 Find the complement of a set.
6 Construct a membership table.
7 Identify the domain, codomain and the range of a function.
8 Identify the type of the functions.
9 Find the inverse and the composition of functions.

<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>	
10	Compute and draw the graph of a function.
11	Find the floor and ceiling of expressions.
12	List and produce the terms of a sequence.
13	Find formulae for a sequence.
14	Express the sum of a sequence.
15	Compute the value of a summation.
16	Find the truth value of a Proposition and construct compound propositions using logical Operators.
17	Use the rules of logic to distinguish between valid and invalid mathematical arguments.
18	Determine the consistency of the system specifications.
19	Classify compound propositions.
20	Prove Propositional Equivalences.
21	Identify the truth value of quantifiers.
22	Negate quantified expression.
23	Identify the Validity of arguments in Propositional logic.
24	Use Rules of Inference to build Arguments.
25	Represent a relation by different methods.
26	Identify the properties of a relation.
27	Combine two or more relations.
28	Find the inverse and complement of relations.
29	Find the compositions and closures of a relation.
30	Draw the state diagram from state table.
31	Find the output generated by finite-state machine for given inputs.
32	Construct finite-state machine for a given problem.
33	Draw the state diagram from state table of finite- state automaton.
34	Construct the state table from state diagram of finite- state automaton.
35	Apply the basic counting principles.
36	Solve counting problems.
37	Use the Permutations and Combinations.
38	Find Boolean expression for a given function.

<b>1 - Summary of the main learning outcomes for students enrolled in the course</b>	
39	Simplify Boolean expression using identities of Boolean algebra and Karnaugh Maps.
40	Find the sum-of-products expansion for a function.
41	Construct the logic circuit that produces a certain output.
<b>2 - Briefly describe any plans for developing and improving the course that are being implemented.</b>	

**C - Course Description** ( Note: General description in the form to be used for the Bulletin or Handbook should be attached)

<b>1 - Topics to be Covered:</b>
The primary goal of this course is to provide an introduction to discrete structures for computer science. Discrete structures are the study of the logical and algebraic relationships between discrete objects. The focus will be on set theory, functions, logic and proofs, Relations, Boolean algebra, modeling computation (Finite-State Machines) and counting techniques.

<b>2 - Course components (total contact hours per semester):</b>			
Lecture:	Tutorial:	Practical/Fieldwork/Internship	Other
3	1	0	

<b>3 - Additional private study/learning hours expected for students per week. (This should be an average for the semester not a specific requirement in each week):</b>

<b>4 - Development of Learning Outcomes in Domains of Learning</b>	
For each of the domains of learning shown below indicate:	
- A brief summary of the knowledge or skill the course is intended to develop;	
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;	
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.	
<b>a. Knowledge</b>	
<b>(i) Description of the knowledge to be acquired</b>	
Introduction	
The Foundations: Logic and Proofs	
Basic Structures: Sets, Functions, Sequences and Sums	
Counting	
Relations	
Boolean Algebra	
Modeling Computation	
<b>(ii) Teaching strategies to be used to develop that knowledge</b>	
<b>(iii) Methods of assessment of knowledge acquired</b>	
1	Test 1
2	Test 2
3	Test 3
4	Quiz 1
5	Quiz 2
6	Quiz 3
7	Lab Test
8	Graded Exercises

**b. Cognitive Skills**

**(i) Cognitive skills to be developed**

**(ii) Teaching strategies to be used to develop these cognitive skills.**

**(iii) Methodes of assessment of student's cognitive skills.**

**c. Interpersonal Skills and Responsibility**

**(i) Description of the interpersonal skills and capacity to carry responsibility to be developed.**

**(ii) Teaching strategies to be used to develop these skills and abilities**

**(iii) Methods of assessment of student's interpersonal skills and capacity to carry responsibility**

**d. Communication, Information Technology and Numerical Skills.**

**(i) Description of the skills to be developed in this domain.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's numerical and communication skills.**

**e. Psychomotor Skills (if applicable)**

**(i) Description of the psychomotor skills to be developed and level of performance required.**



(ii) Methods of assessment to be used to develop the core skills.

#### 5 - Schedule of Assessment Tasks for Students During the Semester

Assessment	Assessment task (eg. essay, test, group project, examination, etc)	Week due	Proportion of final Assessment
1	Test 1		15
2	Test 2		20
3	Test 3		20
4	Quiz 1		5
5	Quiz 2		5
6	Quiz 3		5
7	Lab Test		15
8	Graded Exercises		15

#### D. Student Support

1 - Arrangements for availability of faculty for individual student consultations and academic advice. (include amount of time faculty are available each week)

#### E. Learning Resources

##### 1 - Required Text(s).

Rosen, "Discrete Mathematics and Its Applications", McGraw-Hill Science/Engineering/Math; 6 Edition (July 26, 2006)  
ISBN-13 9780073229720 ISBN-10 0073229725

##### 2 - Essential References

Rosen, "Discrete Mathematics and Its Applications", McGraw-Hill Science/Engineering/Math; 6 Edition (July 26, 2006)  
ISBN-13 9780073229720 ISBN-10 0073229725

##### 3 - Recommended Books and Reference Material (Journals, Reports, ets) (Attach List)

##### 4 - Electronic Materials, Web Sites etc.

##### 5 - Other Learning material such as computer-based programs/CD, professional standards/regulations

## **F. Facilities Required**

Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)

**1. Accommodation (Lecture rooms, laboratories, etc.)**

**2. Computing resources**

**3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)**

## **G . Course Evaluation and Improvement Processes**

**1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching**

**2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department**

**3 Processes for Improvement of Teaching**

**4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)**

**5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.**

# Course Specification

Institution	King Abdulaziz University
College / Department	Faculty of Computing and Information Technology / Computer Science

## A - Course Identification and General Information

<b>1 - Course Title and code:</b>	Analysis and Design of Algorithms / CPCS-223
<b>2 - Credit hours:</b>	3
<b>3 - Program in which the course is offered:</b>	B.S.Computer Science
<b>4 - Name of Faculty member responsible for the course</b>	Dr. Muhammad Abdulhamid Alhashimi
<b>5 - Level/year at which this course is offered</b>	Sophomore - 200
<b>6 - Co-requisites for this course (if any)</b>	
<b>7 - Pre-requisites for this course (if any)</b>	CPCS-204
<b>8 - Location if not offered in main campus</b>	Boys - Sulimania , Girls - Sulimania , Girls - Faisalia , Boys - North Jeddah , Girls - North Jeddah

## B - Objectives

<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>
1 Explain the formal definition of Algorithm.
2 Define at least 5 major problem areas (types) in computing, and for each area list at least 2 fundamental problems and applications.
3 Explain how to measure the efficiency of algorithms.
4 Describe at least 5 design strategies (techniques) that can be used to design an algorithm, and give at least 2 algorithms as examples for each.
5 Use the formal definitions of the 3 major asymptotic notations: big-theta, big-sigma, and big-Oh to compare two functions of n.
6 Compare measurement of algorithm efficiency based on run-time and growth of basic operation count.
7 Setup a sum or recurrence to describe the time efficiency of a simple (small, non-composite) iterative or recursive algorithm given its pseudocode.
8 Solve simple recurrence relations using backward substitution.
9 Recognize selected (covered) recurrences and use their solutions.
10 Use Master Theorem to determine the efficiency of a divide-conquer algorithm given its recurrence relation.
11 Determine the time efficiency of a simple iterative or recursive algorithm given its pseudocode.
12 Solve algorithmically small instances of selected problems (covered) by hand.
13 State formally an algorithm (write pseudocode) based on informal solution descriptions or outline of steps.

<b>1 - Summary of the main learning outcomes for students enrolled in the course</b>	
14	Classify algorithm in terms of performance and design strategy (technique) for each of selected (covered) algorithms.
15	Recognize the performance of each of selected (covered) algorithms.
16	Asses and report the performance of algorithm empirically.
17	Write the formal description of a graph given a pictorial representation.
18	Recognize graph types and selected properties (covered) given a pictorial representation.
19	Select the best data structure to implement dictionary operations given a problem statement.
20	Suggest at least one algorithm that performs better than the base (brute-force) algorithm for selected (covered) problems.
21	Implement algorithm given its pseudocode in language and environment of choice (Javascript in Web browser environment).
22	Program at least one data structure introduced in this course in language and environment of choice (Javascript in Web browser environment).
<b>2 - Briefly describe any plans for developing and improving the course that are being implemented.</b>	

**C - Course Description** ( Note: General description in the form to be used for the Bulletin or Handbook should be attached)

<b>1 - Topics to be Covered:</b>
<p>This course is the first of a two-course sequence on algorithmic solution design and advanced data structures. The course is intended to introduce fundamental algorithms from different application areas to illustrate the techniques used to construct those algorithms, and to study algorithm performance. Topics include: formal definition and characterization of algorithms, recurrence relations, graphs and balanced trees, algorithm efficiency, asymptotic notation and efficiency classes, empirical analysis of performance, brute force, divide-conquer, decrease-conquer, problem reduction, trading time for space, and selected fundamental algorithms from major application areas.</p>

<b>2 - Course components (total contact hours per semester):</b>			
Lecture:	Tutorial:	Practical/Fieldwork/Internship	Other
3	1.5	0	

<b>3 - Additional private study/learning hours expected for students per week. (This should be an average for the semester not a specific requirement in each week):</b>

<b>4 - Development of Learning Outcomes in Domains of Learning</b>	
<p>For each of the domains of learning shown below indicate:</p> <ul style="list-style-type: none"> <li>- A brief summary of the knowledge or skill the course is intended to develop;</li> <li>- A description of the teaching strategies to be used in the course to develop that knowledge or skill;</li> <li>- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.</li> </ul>	
<b>a. Knowledge</b>	
<b>(i) Description of the knowledge to be acquired</b>	
<b>(ii) Teaching strategies to be used to develop that knowledge</b>	
<b>(iii) Methods of assessment of knowledge acquired</b>	
1	Test 1
2	Test 2
3	Project assignment
4	Exercise and programming assignments
5	Final Exam

**b. Cognitive Skills**

**(i) Cognitive skills to be developed**

**(ii) Teaching strategies to be used to develop these cognitive skills.**

**(iii) Methodes of assessment of student's cognitive skills.**

**c. Interpersonal Skills and Responsibility**

**(i) Description of the interpersonal skills and capacity to carry responsibility to be developed.**

**(ii) Teaching strategies to be used to develop these skills and abilities**

**(iii) Methods of assessment of student's interpersonal skills and capacity to carry responsibility**

**d. Communication, Information Technology and Numerical Skills.**

**(i) Description of the skills to be developed in this domain.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's numerical and communication skills.**

**e. Psychomotor Skills (if applicable)**

**(i) Description of the psychomotor skills to be developed and level of performance required.**

(ii) Methods of assessment to be used to develop the above skills.

#### 5 - Schedule of Assessment Tasks for Students During the Semester

Assessment	Assessment task (eg. essay, test, group project, examination, etc)	Week due	Proportion of final Assessment
1	Test 1		15
2	Test 2		15
3	Project assignment		15
4	Exercise and programming assignments		15
5	Final Exam		40

#### D. Student Support

1 - Arrangements for availability of faculty for individual student consultations and academic advice. (include amount of time faculty are available each week)

#### E. Learning Resources

<b>1 - Required Text(s).</b> Levitin, "Introduction to the Design and Analysis of Algorithms", Pearson International Edition, 2nd Edition, 2007 ISBN-13 9780321364135 ISBN-10 0321364139
<b>2 - Essential References</b> Levitin, "Introduction to the Design and Analysis of Algorithms", Pearson International Edition, 2nd Edition, 2007 ISBN-13 9780321364135 ISBN-10 0321364139
<b>3 - Recommended Books and Reference Material (Journals, Reports, ets) (Attach List)</b>
<b>4 - Electronic Materials, Web Sites etc.</b>
<b>5 - Other Learning material such as computer-based programs/CD, professional standards/regulations</b>

#### F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)
1. Accommodation (Lecture rooms, laboratories, etc.)
2. Computing resources
3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)

## **G . Course Evaluation and Improvement Processes**

<b>1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching</b>
<b>2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department</b>
<b>3 Processes for Improvement of Teaching</b>
<b>4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)</b>
<b>5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.</b>

# Course Specification

Institution	King Abdulaziz University
College / Department	Faculty of Computing and Information Technology / Computer Science

## A - Course Identification and General Information

<b>1 - Course Title and code:</b>
Programming Languages / CPCS-301
<b>2 - Credit hours:</b>
3
<b>3 - Program in which the course is offered:</b>
B.S.Computer Science
<b>4 - Name of Faculty member responsible for the course</b>
Dr. Muhammad Yahya Dahab
<b>5 - Level/year at which this course is offered</b>
Junior - 300
<b>6 - Co-requisites for this course (if any)</b>
<b>7 - Pre-requisites for this course (if any)</b>
CPCS-204 CPCS-222
<b>8 - Location if not offered in main campus</b>
Boys - Sulimania , Girls - Sulimania , Girls - Faisalia , Boys - North Jeddah , Girls - North Jeddah

## B - Objectives

<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>
1 Determine programming domains.
2 Determine language evaluation criteria.
3 Determine the major programming language paradigms.
4 List the suitability of a programming language for a specific task.
5 Explain the issues involved in the design and implementation of programming languages.
6 Show the general problem of describing syntax. Identify principles of formal language theory.
7 Show the how to use the attribute grammars.
8 Describe the meanings of programs.



<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>	
9	Identify issues related to the concept of binding.
10	Identify issues related to the type checking, strong typing and type compatibilities.
11	Identify issues related to the scope and lifetime.
12	Identify issues related to the concept of data types.
13	Apply fundamental programming language elements of expressions.
14	Apply fundamental programming language elements of expressions in selection statements and iterative statements.
15	Ability to understand the concepts of the functional programming paradigm and logic programming paradigm
16	Identify the basic elements of logic programming and prolog.
<b>2 - Briefly describe any plans for developing and improving the course that are being implemented.</b>	

**C - Course Description** ( Note: General description in the form to be used for the Bulletin or Handbook should be attached)

<b>1 - Topics to be Covered:</b>
Programming Domains, Language Evaluation Criteria, Language Categories, Language Design Trade-Offs, Implementation Methods, The General Problem of Describing Syntax, Formal Methods of Describing Syntax, Attribute Grammars, Describing the Meanings of Programs, The Concept of Binding, Type Checking, Strong Typing, Type Compatibilities, Scope, Scope and Lifetime, Data Types, Expressions, Selection Statements, Iterative Statements, An Overview of Logic Programming, The Origins of Prolog, The Basic Elements of Prolog.

<b>2 - Course components (total contact hours per semester):</b>			
Lecture:	Tutorial:	Practical/Fieldwork/Internship	Other
3	1	0	

<b>3 - Additional private study/learning hours expected for students per week. (This should be an average for the semester not a specific requirement in each week):</b>

<b>4 - Development of Learning Outcomes in Domains of Learning</b>
For each of the domains of learning shown below indicate:
<ul style="list-style-type: none"> <li>- A brief summary of the knowledge or skill the course is intended to develop;</li> <li>- Adescription of the teaching strategies to be used in the curse to develop that knowledge or skill;</li> <li>- The methods of students assessment to be used in the course to evalute learning outcomes in the domain concerned.</li> </ul>
<b>a. Knowledge</b>
<b>(i) Description of the knowledge to be acquired</b>
Introductory review Strongly typed languages
<b>(ii) Teaching strategies to be used to develop that knowledge</b>

**4 - Development of Learning Outcomes in Domains of Learning**

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.

**a. Knowledge****(iii) Methods of assessment of knowledge acquired**

1	Final Exam
2	Midterm Exam 1
3	Midterm Exam 2
4	Quiz
5	Lab Test
6	Project
7	Discussion

**b. Cognitive Skills****(i) Cognitive skills to be developed****(ii) Teaching strategies to be used to develop these cognitive skills.****(iii) Methodes of assessment of student's cognitive skills.****c. Interpersonal Skills and Responsibility****(i) Description of the interpersonal skills and capacity to carry responsibility to be developed.****(ii) Teaching strategies to be used to develop these skills and abilities****(iii) Methods of assessment of student's interpersonal skills and capacity to carry responsibility**

**d. Communication, Information Technology and Numerical Skills.**

**(i) Description of the skills to be developed in this domain.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's numerical and communication skills.**

**e. Psychomotor Skills (if applicable)**

**(i) Description of the psychomotor skills to be developed and level of performance required.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's psychomotor skills.**

**5 - Schedule of Assessment Tasks for Students During the Semester**

<b>Assessment</b>	<b>Assessment task (eg. essay, test, group project, examination, etc)</b>	<b>Week due</b>	<b>Proportion of final Assessment</b>
1	Final Exam		30
2	Midterm Exam 1		15
3	Midterm Exam 2		15
4	Quiz		10
5	Lab Test		10
6	Project		10
7	Discussion		10

## D. Student Support

**1 - Arrangements for availability of faculty for individual student consultations and academic advice. (include amount of time faculty are available each week)**

## E. Learning Resources

### 1 - Required Text(s).

Sebesta, "Concepts of Programming Languages", Addison Wesley; 8 edition (April 28, 2007)  
ISBN-13 9780321493620 ISBN-10 0321493621

### 2 - Essential References

Sebesta, "Concepts of Programming Languages", Addison Wesley; 8 edition (April 28, 2007)  
ISBN-13 9780321493620 ISBN-10 0321493621

### 3 - Recommended Books and Reference Material (Journals, Reports, ets) (Attach List)

### 4 - Electronic Materials, Web Sites etc.

### 5 - Other Learning material such as computer-based programs/CD, professional standards/regulations

## F. Facilities Required

**Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)**

### 1. Accommodation (Lecture rooms, laboratories, etc.)

### 2. Computing resources

### 3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)

## G . Course Evaluation and Improvement Processes

### 1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching

### 2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department

### 3 Processes for Improvement of Teaching

**4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)**

### 5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.

# Course Specification

Institution	King Abdulaziz University
College / Department	Faculty of Computing and Information Technology / Computer Science

## A - Course Identification and General Information

<b>1 - Course Title and code:</b>
Algorithms and Data Structures (II) / CPCS-324
<b>2 - Credit hours:</b>
3
<b>3 - Program in which the course is offered:</b>
B.S.Computer Science
<b>4 - Name of Faculty member responsible for the course</b>
Dr. Muhammad Abdulshakour Ameen
<b>5 - Level/year at which this course is offered</b>
Junior - 300
<b>6 - Co-requisites for this course (if any)</b>
<b>7 - Pre-requisites for this course (if any)</b>
CPCS-222 CPCS-223
<b>8 - Location if not offered in main campus</b>
Boys - Sulimania , Girls - Sulimania , Girls - Faisalia , Boys - North Jeddah , Girls - North Jeddah

## B - Objectives

<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>
1 To know the structures of advanced algorithms.
2 To be able to use advanced algorithms in building and modifying advanced constructions.
3 To be able to keep track of and evaluate algorithms in terms of space and speed.
<b>2 - Briefly describe any plans for developing and improving the course that are being implemented.</b>

**C - Course Description** ( Note: General description in the form to be used for the Bulletin or Handbook should be attached)

**1 - Topics to be Covered:**

This is the second course that addresses algorithms and data structures. It aims to acquaint the students with some advanced issues in algorithms such as weight-balanced trees, the structure of advanced algorithms, and their degree of complexity.

**2 - Course components (total contact hours per semester):**

Lecture:	Tutorial:	Practical/Fieldwork/Internship	Other
3	1	0	

**3 - Additional private study/learning hours expected for students per week. (This should be an average for the semester not a specific requirement in each week):**

**4 - Development of Learning Outcomes in Domains of Learning**

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.

**a. Knowledge**

**(i) Description of the knowledge to be acquired**

**(ii) Teaching strategies to be used to develop that knowledge**

**(iii) Methods of assessment of knowledge acquired**

**b. Cognitive Skills**

**(i) Cognitive skills to be developed**

**(ii) Teaching strategies to be used to develop these cognitive skills.**

**(iii) Methodes of assessment of student's cognitive skills.**

**c. Interpersonal Skills and Responsibility**

**(i) Description of the interpersonal skills and capacity to carry responsibility to be developed.**

**(ii) Teaching strategies to be used to develop these skills and abilities**

**(iii) Methods of assessment of student's interpersonal skills and capacity to carry responsibility**

**d. Communication, Information Technology and Numerical Skills.**

**(i) Description of the skills to be developed in this domain.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's numerical and communication skills.**

**e. Psychomotor Skills (if applicable)**

**(i) Description of the psychomotor skills to be developed and level of performance required.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's psychomotor skills.**

## 5 - Schedule of Assessment Tasks for Students During the Semester

Assessment	Assessment task (eg. essay, test, group project, examination, etc)	Week due	Proportion of final Assessment

## D. Student Support

1 - Arrangements for availability of faculty for individual student consultations and academic advice. (include amount of time faculty are available each week)

## E. Learning Resources

<b>1 - Required Text(s).</b> Levitin, "Introduction to the Design and Analysis of Algorithms", Pearson International Edition, 2nd Edition, 2007 ISBN-13 9780321364135 ISBN-10 0321364139
<b>2 - Essential References</b> Levitin, "Introduction to the Design and Analysis of Algorithms", Pearson International Edition, 2nd Edition, 2007 ISBN-13 9780321364135 ISBN-10 0321364139
<b>3 - Recommended Books and Reference Material (Journals, Reports, ets) (Attach List)</b>
<b>4 - Electronic Materials, Web Sites etc.</b>
<b>5 - Other Learning material such as computer-based programs/CD, professional standards/regulations</b>

## F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)
<b>1. Accommodation (Lecture rooms, laboratories, etc.)</b>
<b>2. Computing resources</b>
<b>3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)</b>



## **G . Course Evaluation and Improvement Processes**

<b>1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching</b>
<b>2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department</b>
<b>3 Processes for Improvement of Teaching</b>
<b>4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)</b>
<b>5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.</b>

# Course Specification

Institution	King Abdulaziz University
College / Department	Faculty of Computing and Information Technology / Computer Science

## A - Course Identification and General Information

<b>1 - Course Title and code:</b>
Software Engineering (I) / CPCS-351
<b>2 - Credit hours:</b>
3
<b>3 - Program in which the course is offered:</b>
B.S.Computer Science
<b>4 - Name of Faculty member responsible for the course</b>
Dr. Wajdi Homaid Aljdaibi
<b>5 - Level/year at which this course is offered</b>
Junior - 300
<b>6 - Co-requisites for this course (if any)</b>
<b>7 - Pre-requisites for this course (if any)</b>
CPCS-204
<b>8 - Location if not offered in main campus</b>
Boys - Sulimania , Girls - Sulimania , Girls - Faisalia , Boys - North Jeddah , Girls - North Jeddah

## B - Objectives

<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>
<b>2 - Briefly describe any plans for developing and improving the course that are being implemented.</b>

**C - Course Description** ( Note: General description in the form to be used for the Bulletin or Handbook should be attached)

<b>1 - Topics to be Covered:</b>

<b>2 - Course components (total contact hours per semester):</b>			
Lecture:	Tutorial:	Practical/Fieldwork/Internship	Other
3	1	0	

<b>3 - Additional private study/learning hours expected for students per week. (This should be an average for the semester not a specific requirement in each week):</b>

<b>4 - Development of Learning Outcomes in Domains of Learning</b> For each of the domains of learning shown below indicate: - A brief summary of the knowledge or skill the course is intended to develop; - A description of the teaching strategies to be used in the course to develop that knowledge or skill; - The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.
<b>a. Knowledge</b>
(i) Description of the knowledge to be acquired
(ii) Teaching strategies to be used to develop that knowledge
(iii) Methods of assessment of knowledge acquired
<b>b. Cognitive Skills</b>
(i) Cognitive skills to be developed
(ii) Teaching strategies to be used to develop these cognitive skills.
(iii) Methodes of assessment of student's cognitive skills.

**c. Interpersonal Skills and Responsibility**

**(i) Description of the interpersonal skills and capacity to carry responsibility to be developed.**

**(ii) Teaching strategies to be used to develop these skills and abilities**

**(iii) Methods of assessment of student's interpersonal skills and capacity to carry responsibility**

**d. Communication, Information Technology and Numerical Skills.**

**(i) Description of the skills to be developed in this domain.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's numerical and communication skills.**

**e. Psychomotor Skills (if applicable)**

**(i) Description of the psychomotor skills to be developed and level of performance required.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's psychomotor skills.**

## 5 - Schedule of Assessment Tasks for Students During the Semester

Assessment	Assessment task (eg. essay, test, group project, examination, etc)	Week due	Proportion of final Assessment

## D. Student Support

**1 - Arrangements for availability of faculty for individual student consultations and academic advice. (include amount of time faculty are available each week)**

## E. Learning Resources

### 1 - Required Text(s).

Lethbridge, Robert Laganriere, "Object-Oriented Software Engineering: Practical Software Development using UML and Java", McGraw-Hill Publishing Co. (August 1, 2001)  
ISBN-13 9780077097615 ISBN-10 0077097610

### 2 - Essential References

Lethbridge, Robert Laganriere, "Object-Oriented Software Engineering: Practical Software Development using UML and Java", McGraw-Hill Publishing Co. (August 1, 2001)  
ISBN-13 9780077097615 ISBN-10 0077097610

### 3 - Recommended Books and Reference Material (Journals, Reports, ets) (Attach List)

### 4 - Electronic Materials, Web Sites etc.

### 5 - Other Learning material such as computer-based programs/CD, professional standards/regulations

## F. Facilities Required

**Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)**

### 1. Accommodation (Lecture rooms, laboratories, etc.)

### 2. Computing resources

### 3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)

## **G . Course Evaluation and Improvement Processes**

<b>1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching</b>
<b>2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department</b>
<b>3 Processes for Improvement of Teaching</b>
<b>4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)</b>
<b>5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.</b>

# Course Specification

Institution	King Abdulaziz University
College / Department	Faculty of Computing and Information Technology / Computer Science

## A - Course Identification and General Information

<b>1 - Course Title and code:</b>	Software Engineering Practice / CPCS-353
<b>2 - Credit hours:</b>	3
<b>3 - Program in which the course is offered:</b>	B.S.Computer Science
<b>4 - Name of Faculty member responsible for the course</b>	Prof. Fathi Alburaai Isa
<b>5 - Level/year at which this course is offered</b>	Junior - 300
<b>6 - Co-requisites for this course (if any)</b>	
<b>7 - Pre-requisites for this course (if any)</b>	CPCS-351
<b>8 - Location if not offered in main campus</b>	Boys - Sulimania , Girls - Sulimania , Girls - Faisalialia , Boys - North Jeddah , Girls - North Jeddah

## B - Objectives

<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>
1 Estimate the size of new software system.
2 Estimate the effort of new software systems.
3 Estimate duration of new software system.
4 Describe the advantages and disadvantages of distributed system architectures.
5 Demonstrate client server systems.
6 Demonstrate distributed object architecture.
7 Define the requirements.
8 Explain the requirements.
9 Describe use case diagram relationships.
10 Describe each use case.
11 Demonstrate object oriented design.
12 Identify classes and relationships.
13 Demonstrate class diagrams.
14 Describe object oriented classes.
15 Demonstrate detailed (sequence and collaboration diagrams) design.
16 Demonstrate state diagrams.

<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>	
17	Examine black-box testing.
18	Examine white box testing.
19	Demonstrate unit testing, integration.
20	Demonstrate system (product) testing and acceptance testing.
21	Design a real client-server system.
22	Verify the design of real client server system.
23	Write the real client server system in java.
24	Test the real client-server system as black-box.
25	Test the real client-server system as white box.
26	Evaluate the real client-server system.
27	Structure a static tester.
28	Structure dynamic tester.
29	Describe software maintenance.
<b>2 - Briefly describe any plans for developing and improving the course that are being implemented.</b>	

**C - Course Description** ( Note: General description in the form to be used for the Bulletin or Handbook should be attached)

<b>1 - Topics to be Covered:</b>
<p>Software engineering practices is an elective course offered by computer science department. In this course the practices of software engineering are emphasized. We study how to design and think in an object oriented fashion. The course is intended to practices of object-oriented software engineering, from analysis through testing. Topics included are practices of software project management, Project Estimation, distributed system architectures (client/ server), distributed object model, building client/server applications based-on Object-oriented technology and Object- Oriented software engineering approach. The course will also teach students the principles and practices of software testing, validation, verification, maintenance, writing documentation, evaluation of systems and tools.</p>

<b>2 - Course components (total contact hours per semester):</b>			
Lecture:	Tutorial:	Practical/Fieldwork/Internship	Other
3	1	0	

<b>3 - Additional private study/learning hours expected for students per week. (This should be an average for the semester not a specific requirement in each week):</b>

<b>4 - Development of Learning Outcomes in Domains of Learning</b>
For each of the domains of learning shown below indicate:
<ul style="list-style-type: none"> <li>- A brief summary of the knowledge or skill the course is intended to develop;</li> <li>- Adescription of the teaching strategies to be used in the curse to develop that knowledge or skill;</li> <li>- The methods of students assessment to be used in the course to evalute learning outcomes in the domain concerned.</li> </ul>
<b>a. Knowledge</b>
<b>(i) Description of the knowledge to be acquired</b>
<p>COST ESTIMATION AND MANAGEMENT</p> <p>Distributed system architectures</p> <p>Object oriented Requirement engineering</p> <p>Object oriented Analysis model</p> <p>Design model and refined system design model</p> <p>Building sequence diagrams</p> <p>Design Each class in details state chart and activity diagram.</p>



#### 4 - Development of Learning Outcomes in Domains of Learning

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.

##### a. Knowledge

Midterm exam+Implementation of classes and unit testing  
Implementation of classes and unit testing (continue)  
software testing: Testing phases and testing techniques  
Software Evaluation  
OO software engineering methodology  
System Maintenance

##### (ii) Teaching strategies to be used to develop that knowledge

###### Lecture

Instructor will teach the topics of the course emphasizing on related course learning outcomes (CLOs), while student will take notes and read in the text book. Student learning outcomes will be measured by lab test, project report,, midterm exams and final exam. Student will be informed by the correct answers of taken exams to insure that the learning outcomes are fulfilled. At the end of the semester there will be one major final exam that would cover all the main topics of the course.

###### Lab

During the lab sessions, the students will be required to use various design tools including sequence diagrams; apply various software testing, including unit testing to small-scaled software projects; build small-scaled client server systems (in java). The lab instructor/ demonstrator will maintain the lab manual and guide the students during the lab sessions.

##### (iii) Methods of assessment of knowledge acquired

1	Final Exam
2	Midterm Exam
3	Lab Test
4	Project Report

##### b. Cognitive Skills

##### (i) Cognitive skills to be developed

##### (ii) Teaching strategies to be used to develop these cognitive skills.

##### (iii) Methodes of assessment of student's cognitive skills.

**c. Interpersonal Skills and Responsibility**

**(i) Description of the interpersonal skills and capacity to carry responsibility to be developed.**

**(ii) Teaching strategies to be used to develop these skills and abilities**

**(iii) Methods of assessment of student's interpersonal skills and capacity to carry responsibility**

**d. Communication, Information Technology and Numerical Skills.**

**(i) Description of the skills to be developed in this domain.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's numerical and communication skills.**

**e. Psychomotor Skills (if applicable)**

**(i) Description of the psychomotor skills to be developed and level of performance required.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's psychomotor skills.**

## 5 - Schedule of Assessment Tasks for Students During the Semester

Assessment	Assessment task (eg. essay, test, group project, examination, etc)	Week due	Proportion of final Assessment
1	Final Exam		40
2	Midterm Exam		20
3	Lab Test		10
4	Project Report		30

## D. Student Support

**1 - Arrangements for availability of faculty for individual student consultations and academic advice. (include amount of time faculty are available each week)**

## E. Learning Resources

<b>1 - Required Text(s).</b> Schach, "Object-Oriented Software Engineering", McGraw-Hill Science/Engineering/Math; 1 edition (September 5, 2007) ISBN-13 9780073523330 ISBN-10 007352333X
<b>2 - Essential References</b> Schach, "Object-Oriented Software Engineering", McGraw-Hill Science/Engineering/Math; 1 edition (September 5, 2007) ISBN-13 9780073523330 ISBN-10 007352333X
<b>3 - Recommended Books and Reference Material (Journals, Reports, ets) (Attach List)</b>
<b>4 - Electronic Materials, Web Sites etc.</b>
<b>5 - Other Learning material such as computer-based programs/CD, professional standards/regulations</b>

## F. Facilities Required

<b>Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)</b>
<b>1. Accommodation (Lecture rooms, laboratories, etc.)</b>
<b>2. Computing resources</b>
<b>3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)</b>

## **G . Course Evaluation and Improvement Processes**

<b>1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching</b>
<b>2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department</b>
<b>3 Processes for Improvement of Teaching</b>
<b>4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)</b>
<b>5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.</b>

# Course Specification

Institution	King Abdulaziz University
College / Department	Faculty of Computing and Information Technology / Computer Science

## A - Course Identification and General Information

<b>1 - Course Title and code:</b>	Operating Systems (I) / CPCS-361
<b>2 - Credit hours:</b>	3
<b>3 - Program in which the course is offered:</b>	B.S.Computer Science
<b>4 - Name of Faculty member responsible for the course</b>	Dr. Abdulla Ahmad Basuhail
<b>5 - Level/year at which this course is offered</b>	Junior - 300
<b>6 - Co-requisites for this course (if any)</b>	
<b>7 - Pre-requisites for this course (if any)</b>	CPCS-214 CPCS-204
<b>8 - Location if not offered in main campus</b>	Boys - Sulimania , Girls - Sulimania , Girls - Faisalia , Boys - North Jeddah , Girls - North Jeddah

## B - Objectives

<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>
1 Define operating system.
2 List the basic components of an operating system.
3 Describe computer system structure and interaction with the operating system.
4 Describe the services provided by operating system.
5 Explain operating systems installation and booting.
6 Define and discuss the process concept.
7 Describe various features of processes scheduling, creation, termination, and communication.
8 Identify the notion of a thread.
9 Discuss issues related to multithreaded programming.
10 Explain CPU scheduling and discuss its criteria.
11 Analyze various CPU-scheduling algorithms.
12 Discuss evaluation criteria for selecting a scheduling algorithm.
13 Discuss the critical-section problem and synchronization.
14 Demonstrate software and hardware solutions of the critical-section problem.
15 Apply critical-section problem solutions to some of the classical problems of synchronization.
16 Explain deadlocks and the methods and algorithms of handling deadlocks.

<b>1 - Summary of the main learning outcomes for students enrolled in the course</b>	
17	Explain various ways of organizing memory hardware.
18	Discuss memory-management techniques and their features and limitations.
19	Describe the benefits of a virtual memory system.
20	Explain and analyze page-replacement and allocation algorithms.
21	Define file concept.
22	Explain the function of file systems.
23	Discuss file-system design tradeoffs, including access methods, file sharing, file locking, directory structures, and protection
24	Discuss block allocation and free-block algorithms and tradeoffs.
25	Describe the physical structure of mass-storage devices.
26	Explain and analyze mass-storage management algorithms.
27	Discuss operating-system services provided for mass storage.
28	Explore the structure of an operating system's I/O subsystem.
29	Discuss the principles of I/O hardware and its complexity. Provide details of the performance aspects of I/O hardware and software.
<b>2 - Briefly describe any plans for developing and improving the course that are being implemented.</b>	

**C - Course Description** ( Note: General description in the form to be used for the Bulletin or Handbook should be attached)

<b>1 - Topics to be Covered:</b>
<p>This course is a general overview of operating systems concepts and recent methodologies and techniques used in the field and their trades-off, with various examples from the contemporary used systems. The course covers the basic structure of an operating system, its interaction with the hardware, software, and users, and the services it provide. The course illustrates different algorithms and techniques used in controlling, managing, and allocating various computer resources, such as CPU, memory, storage and I/O devices. It demonstrates the tuning of the operating systems for maximizing the utilization and increasing the performance of computer system.</p>

<b>2 - Course components (total contact hours per semester):</b>			
Lecture:	Tutorial:	Practical/Fieldwork/Internship	Other
3	1	0	

<b>3 - Additional private study/learning hours expected for students per week. (This should be an average for the semester not a specific requirement in each week):</b>

<b>4 - Development of Learning Outcomes in Domains of Learning</b>	
For each of the domains of learning shown below indicate:	
<ul style="list-style-type: none"> <li>- A brief summary of the knowledge or skill the course is intended to develop;</li> <li>- A description of the teaching strategies to be used in the course to develop that knowledge or skill;</li> <li>- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.</li> </ul>	
<b>a. Knowledge</b>	
<b>(i) Description of the knowledge to be acquired</b>	
<b>(ii) Teaching strategies to be used to develop that knowledge</b>	
<b>(iii) Methods of assessment of knowledge acquired</b>	
1	Final Exam
2	Tests
3	Quizzes
4	Lab
5	Project Report

**4 - Development of Learning Outcomes in Domains of Learning**

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.

**a. Knowledge****(iii) Methods of assessment of knowledge acquired**

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[Exercises](#)**b. Cognitive Skills****(i) Cognitive skills to be developed****(ii) Teaching strategies to be used to develop these cognitive skills.****(iii) Methodes of assessment of student's cognitive skills.****c. Interpersonal Skills and Responsibility****(i) Description of the interpersonal skills and capacity to carry responsibility to be developed.****(ii) Teaching strategies to be used to develop these skills and abilities****(iii) Methods of assessment of student's interpersonal skills and capacity to carry responsibility**

**d. Communication, Information Technology and Numerical Skills.**

**(i) Description of the skills to be developed in this domain.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's numerical and communication skills.**

**e. Psychomotor Skills (if applicable)**

**(i) Description of the psychomotor skills to be developed and level of performance required.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's psychomotor skills.**

**5 - Schedule of Assessment Tasks for Students During the Semester**

Assessment	Assessment task (eg. essay, test, group project, examination, etc)	Week due	Proportion of final Assessment
1	Final Exam		30
2	Tests		30
3	Quizzes		5
4	Lab		20
5	Project Report		10
6	Exercises		5



## D. Student Support

**1 - Arrangements for availability of faculty for individual student consultations and academic advice. (include amount of time faculty are available each week)**

## E. Learning Resources

### 1 - Required Text(s).

Silberschatz, Peter B. Galvin, Greg Gagne, "Operating System Concepts", Wiley; 8 edition (July 29, 2008)  
ISBN-13 9780470128725 ISBN-10 0470128720

### 2 - Essential References

Silberschatz, Peter B. Galvin, Greg Gagne, "Operating System Concepts", Wiley; 8 edition (July 29, 2008)  
ISBN-13 9780470128725 ISBN-10 0470128720

### 3 - Recommended Books and Reference Material (Journals, Reports, ets) (Attach List)

### 4 - Electronic Materials, Web Sites etc.

### 5 - Other Learning material such as computer-based programs/CD, professional standards/regulations

## F. Facilities Required

**Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)**

### 1. Accommodation (Lecture rooms, laboratories, etc.)

### 2. Computing resources

### 3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)

## G . Course Evaluation and Improvement Processes

### 1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching

### 2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department

### 3 Processes for Improvement of Teaching

4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)

### 5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.

# Course Specification

Institution	King Abdulaziz University
College / Department	Faculty of Computing and Information Technology / Computer Science

## A - Course Identification and General Information

<b>1 - Course Title and code:</b>	Computer Networks (I) / CPCS-371
<b>2 - Credit hours:</b>	3
<b>3 - Program in which the course is offered:</b>	B.S.Computer Science
<b>4 - Name of Faculty member responsible for the course</b>	Dr. Vijey Thayanathan
<b>5 - Level/year at which this course is offered</b>	Junior - 300
<b>6 - Co-requisites for this course (if any)</b>	
<b>7 - Pre-requisites for this course (if any)</b>	CPCS-214
<b>8 - Location if not offered in main campus</b>	Boys - Sulimania , Girls - Sulimania , Girls - Faisalia , Boys - North Jeddah , Girls - North Jeddah

## B - Objectives

<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>
1 Describe background and history of networking and the Internet
2 Discuss the evolution of early networks and the Internet
3 Introducing network and internet architectures
4 Recognize the different network layers
5 Identify network protocols
6 Familiar with network application architectures
7 Familiar with various type of network application
8 Classify the different network technologies
9 To be familiar with data transferring techniques using TCP
10 To understand the Principles of Congestion Control
11 Introducing routers and their applications in network layer
12 To be familiar with the routing algorithms
13 Learning services provided by link layers
14 Understanding about Addressing, Ethernet and PPP
15 Discuss important network standards in their historical context
16 Explain how a network can detect and correct transmission errors

<b>1 - Summary of the main learning outcomes for students enrolled in the course</b>	
17	Explain how a packet is routed over the Internet
18	Learning necessary security issues in computer networks
19	Understanding basic idea of network security
20	To be familiar with fundamental security algorithms
<b>2 - Briefly describe any plans for developing and improving the course that are being implemented.</b>	

**C - Course Description** ( Note: General description in the form to be used for the Bulletin or Handbook should be attached)

<b>1 - Topics to be Covered:</b>
The course provides an understanding of the basic concepts of computer network and ISO- 7 layers reference model which includes necessary protocols. Selected network layers such as data link layer, transport layer, network layer etc. will be focused with detail information. In addition to this, network security, web technologies and application layer will be considered as an introductory level learning.

<b>2 - Course components (total contact hours per semester):</b>			
Lecture:	Tutorial:	Practical/Fieldwork/Internship	Other
3	1	0	

<b>3 - Additional private study/learning hours expected for students per week. (This should be an average for the semester not a specific requirement in each week):</b>

<b>4 - Development of Learning Outcomes in Domains of Learning</b>
For each of the domains of learning shown below indicate:
- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.

**a. Knowledge**

<b>(i) Description of the knowledge to be acquired</b>
Introduction to computer networks and internet communication
Network technologies and layered network architecture
Network addresses especially the World Wide Web
Network protocols
Other related technologies such as Ethernet, internet protocols TCP/IP
Network security

<b>(ii) Teaching strategies to be used to develop that knowledge</b>
<b>Lectures</b>
Instructor will teach the topics of the course emphasizing on the course related learning objectives through two eighty minutes lecture meetings per week. Lectures will; in most cases, have a mix of formal lecturing and active learning.
<b>Tutorials</b>
During the tutorials (one 80 minutes meeting per week), the instructor will solve example problems and model exam questions related to the recently introduced topic. The instructor will also discuss with the students the problems they faced while trying to solve the assigned homework problems. Some of the tutorials are devoted for training the students on software packages needed in the course.
<b>Project</b>
A number of projects are assigned throughout the semester.

**4 - Development of Learning Outcomes in Domains of Learning**

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.

**a. Knowledge****(iii) Methods of assessment of knowledge acquired**

1	Final Exam
2	Midterm Exam 1
3	Midterm Exam 2
4	Quiz 1
5	Quiz 2
6	Quiz 3
7	Homework assignment
8	Project

**b. Cognitive Skills****(i) Cognitive skills to be developed****(ii) Teaching strategies to be used to develop these cognitive skills.****(iii) Methodes of assessment of student's cognitive skills.****c. Interpersonal Skills and Responsibility****(i) Description of the interpersonal skills and capacity to carry responsibility to be developed.****(ii) Teaching strategies to be used to develop these skills and abilities****(iii) Methods of assessment of student's interpersonal skills and capacity to carry responsibility**

**d. Communication, Information Technology and Numerical Skills.**

**(i) Description of the skills to be developed in this domain.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's numerical and communication skills.**

**e. Psychomotor Skills (if applicable)**

**(i) Description of the psychomotor skills to be developed and level of performance required.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's psychomotor skills.**

**5 - Schedule of Assessment Tasks for Students During the Semester**

<b>Assessment</b>	<b>Assessment task (eg. essay, test, group project, examination, etc)</b>	<b>Week due</b>	<b>Proportion of final Assessment</b>
1	Final Exam		35
2	Midterm Exam 1		15
3	Midterm Exam 2		15
4	Quiz 1		5
5	Quiz 2		5
6	Quiz 3		5
7	Homework assignment		10
8	Project		10

## D. Student Support

**1 - Arrangements for availability of faculty for individual student consultations and academic advice. (include amount of time faculty are available each week)**

## E. Learning Resources

### 1 - Required Text(s).

Kurose, Keith W. Ross, "Computer Networking: A Top-Down Approach", Addison Wesley; 5 edition (March 31, 2009)  
ISBN-13 9780136079675 ISBN-10 0136079679

### 2 - Essential References

Kurose, Keith W. Ross, "Computer Networking: A Top-Down Approach", Addison Wesley; 5 edition (March 31, 2009)  
ISBN-13 9780136079675 ISBN-10 0136079679

### 3 - Recommended Books and Reference Material (Journals, Reports, ets) (Attach List)

### 4 - Electronic Materials, Web Sites etc.

### 5 - Other Learning material such as computer-based programs/CD, professional standards/regulations

## F. Facilities Required

**Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)**

### 1. Accommodation (Lecture rooms, laboratories, etc.)

### 2. Computing resources

### 3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)

## G . Course Evaluation and Improvement Processes

### 1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching

### 2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department

### 3 Processes for Improvement of Teaching

4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)

### 5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.

# Course Specification

Institution	King Abdulaziz University
College / Department	Faculty of Computing and Information Technology / Computer Science

## A - Course Identification and General Information

<b>1 - Course Title and code:</b>	Computer Networks (II) / CPCS-372
<b>2 - Credit hours:</b>	3
<b>3 - Program in which the course is offered:</b>	B.S.Computer Science
<b>4 - Name of Faculty member responsible for the course</b>	Mr. Muhammad Imran Khan
<b>5 - Level/year at which this course is offered</b>	Junior - 300
<b>6 - Co-requisites for this course (if any)</b>	
<b>7 - Pre-requisites for this course (if any)</b>	CPCS-371
<b>8 - Location if not offered in main campus</b>	Boys - Sulimania , Girls - Sulimania , Girls - Faisalia , Boys - North Jeddah , Girls - North Jeddah

## B - Objectives

<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>
1 Describe how Internet works
2 Illustrate a good conceptual understanding of advance computer networking concepts
3 Demonstrate an understanding of different types of Computer Networks
4 Define the quantitative performance metrics that often drive network design
5 Describe issues that all data link protocols must address, including encoding, framing and error detection
6 Describe two prevalent switching technologies, Switched Ethernet and ATM
7 Describe and understand network switching concepts
8 Develop an understanding of ATM Networks using ATM Switches
9 Discuss and identify the concepts of underlying Routing Protocol, their main characteristics and functionality
10 Demonstrate an understanding of Routing Algorithms on which Routing Protocols are based in Computer Networks
11 Illustrate how networks that scale to the size of the Internet are able to route packets, unicast, multicast and interdomain routing are covered
12 Describe the Internet Transmission Control Protocol (TCP) and Remote Procedure Call (RPC) used to build client server application in detail
13 Understand Real Time Transport Protocol (RTP) which supports multimedia applications
14 Discusses congestion control and resource allocation

<b>1 - Summary of the main learning outcomes for students enrolled in the course</b>	
15	Discusses Network Security, overview of cryptographic tools, problems of key distribution, authentication techniques
16	Describe how to program application in the form of client / server sockets
17	Demonstrate confidence to work independently to setup and maintain computer networking systems
18	Understand technical papers in the area of advance computer networks
19	Modeling Network Protocols to understand the Routing Protocols concepts in Network Simulation Tool OPNET
20	Developing planning strategies for organizational Computer Networks
21	Identify the techniques used to address bottlenecks in Computer Networks
22	Identify the methods of network management and control in Computer Networks
23	Describe network control and decision-making through the collection of data from the software agent
<b>2 - Briefly describe any plans for developing and improving the course that are being implemented.</b>	

**C - Course Description** ( Note: General description in the form to be used for the Bulletin or Handbook should be attached)

<b>1 - Topics to be Covered:</b>
The aim of this course is to introduce students with the principles, design, implementation, and performance of computer networks. This course is based on the layering architecture and covers the routing protocols in detail and advanced topics in networking technology as well as the successive developments in this area. Major Topics include: Internet routing protocols, local area networks, congestion control, TCP, wireless communications and networking, mobile IP, performance analysis, network address translation, multimedia over IP, switching and routing, peer-to-peer networking, network security, and other current research topics in the area of computer networks.

<b>2 - Course components (total contact hours per semester):</b>			
Lecture:	Tutorial:	Practical/Fieldwork/Internship	Other
3	1	0	

<b>3 - Additional private study/learning hours expected for students per week. (This should be an average for the semester not a specific requirement in each week):</b>

<b>4 - Development of Learning Outcomes in Domains of Learning</b>
For each of the domains of learning shown below indicate:
- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.
<b>a. Knowledge</b>
<b>(i) Description of the knowledge to be acquired</b>
Foundation
Direct Link Networks
Packet Switching
Internetworking
Congestion Control and Resource



**4 - Development of Learning Outcomes in Domains of Learning**

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.

**a. Knowledge****(ii) Teaching strategies to be used to develop that knowledge****Lecture**

Instructor teaches the topics of the course emphasizing on related course learning outcomes (CLOs). During the class lecture the students use to take the notes and later they have to read the topic from the book. Students learning outcomes will be measured by the lab test, lab reports, Final Project, Test 1, Test 2 and Final Term Examination. Marked examination papers are shown to the students so that they can be informed about the correct answers and learning outcomes are fulfilled. Final Tem Examination covers all the main topics of the course.

**Lab**

During the lab students have to use the OPNET simulator to simulate different networking scenarios given in the experimental lab manual of the course. Lab instructor maintains the lab manual and guides the students during the lab sessions. At the start of each lab the whole scenario which has to be simulated is explained to the students by the instructor so that student can understand what they have to simulate in the lab.

**(iii) Methods of assessment of knowledge acquired**

1	Final Exam
2	Midterm Exam 1
3	Midterm Exam 2
4	Quiz
5	Lab Test
6	Lab Report

**b. Cognitive Skills****(i) Cognitive skills to be developed****(ii) Teaching strategies to be used to develop these cognitive skills.****(iii) Methodes of assessment of student's cognitive skills.**

**c. Interpersonal Skills and Responsibility**

**(i) Description of the interpersonal skills and capacity to carry responsibility to be developed.**

**(ii) Teaching strategies to be used to develop these skills and abilities**

**(iii) Methods of assessment of student's interpersonal skills and capacity to carry responsibility**

**d. Communication, Information Technology and Numerical Skills.**

**(i) Description of the skills to be developed in this domain.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's numerical and communication skills.**

**e. Psychomotor Skills (if applicable)**

**(i) Description of the psychomotor skills to be developed and level of performance required.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's psychomotor skills.**

## 5 - Schedule of Assessment Tasks for Students During the Semester

Assessment	Assessment task (eg. essay, test, group project, examination, etc)	Week due	Proportion of final Assessment
1	Final Exam		40
2	Midterm Exam 1		15
3	Midterm Exam 2		15
4	Quiz		10
5	Lab Test		10
6	Lab Report		10

## D. Student Support

**1 - Arrangements for availability of faculty for individual student consultations and academic advice. (include amount of time faculty are available each week)**

## E. Learning Resources

<b>1 - Required Text(s).</b> Peterson, Bruce S. Davie, "Computer Networks: A Systems Approach", Morgan Kaufmann; 4 edition (March 22, 2007) ISBN-13 9780123705488 ISBN-10 0123705487
<b>2 - Essential References</b> Peterson, Bruce S. Davie, "Computer Networks: A Systems Approach", Morgan Kaufmann; 4 edition (March 22, 2007) ISBN-13 9780123705488 ISBN-10 0123705487
<b>3 - Recommended Books and Reference Material (Journals, Reports, ets) (Attach List)</b>
<b>4 - Electronic Materials, Web Sites etc.</b>
<b>5 - Other Learning material such as computer-based programs/CD, professional standards/regulations</b>

## F. Facilities Required

<b>Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)</b>
<b>1. Accommodation (Lecture rooms, laboratories, etc.)</b>
<b>2. Computing resources</b>
<b>3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)</b>

## **G . Course Evaluation and Improvement Processes**

<b>1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching</b>
<b>2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department</b>
<b>3 Processes for Improvement of Teaching</b>
<b>4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)</b>
<b>5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.</b>

# Course Specification

Institution	King Abdulaziz University
College / Department	Faculty of Computing and Information Technology / Computer Science

## A - Course Identification and General Information

<b>1 - Course Title and code:</b>	Human-Computer Interaction / CPCS-381
<b>2 - Credit hours:</b>	2
<b>3 - Program in which the course is offered:</b>	B.S.Computer Science
<b>4 - Name of Faculty member responsible for the course</b>	Dr. Anas Muhammad Fattouh
<b>5 - Level/year at which this course is offered</b>	Junior - 300
<b>6 - Co-requisites for this course (if any)</b>	
<b>7 - Pre-requisites for this course (if any)</b>	CPCS-204
<b>8 - Location if not offered in main campus</b>	Boys - Sulimania , Girls - Sulimania , Girls - Faisalia , Boys - North Jeddah , Girls - North Jeddah

## B - Objectives

<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>
1 Recognize good and bad elements in interfaces.
2 List and explain usability goals.
3 List and explain usability principles.
4 Use usability principles to analyze an interface.
5 Explain the model of information processing.
6 Use principles of Gestalt psychology in interface design.
7 Identify the impact of human memory on interface design.
8 Summarize the activities in HCI design process.
9 Compare different HCI lifecycle models.
10 Differentiate between design rules, design standards, and design guidelines.
11 Explain the Shneiderman's eight golden rules.
12 Differentiate between several data gathering Tools.
13 Gather needs for a user interface.
14 Differentiate between qualitative and quantitative data.
15 Use data analysis tool to analyze gathered data.
16 Explain the objectives of task description and analysis.

<b>1 - Summary of the main learning outcomes for students enrolled in the course</b>	
17	List different tools for task description and analysis.
18	Use task analysis methods to analyze a user goal.
19	Recognize several interaction styles.
20	Develop an interaction framework model for a specific goal
21	Differentiate between several prototyping Tools.
22	Implement a prototype using ready-made software.
23	Describe evaluation Tools.
24	Conduct a test to evaluate the prototype.
<b>2 - Briefly describe any plans for developing and improving the course that are being implemented.</b>	

**C - Course Description** ( Note: General description in the form to be used for the Bulletin or Handbook should be attached)

<b>1 - Topics to be Covered:</b>
This course is designed to familiarize the students with various concepts and techniques for understanding user needs, interface design and prototyping, and interface evaluation. Major topics to be covered in this course include: Introduction to HCI, HCI Goals, Cognitive and Perceptual Issues, HCI Design, Data Gathering, Data Analysis, Task Description, Task Analysis, Interaction Styles, Interaction Frameworks, Prototyping, and Evaluation.

<b>2 - Course components (total contact hours per semester):</b>			
Lecture:	Tutorial:	Practical/Fieldwork/Internship	Other
2	1	0	

<b>3 - Additional private study/learning hours expected for students per week. (This should be an average for the semester not a specific requirement in each week):</b>

<b>4 - Development of Learning Outcomes in Domains of Learning</b>
For each of the domains of learning shown below indicate:
- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.
<b>a. Knowledge</b>
<b>(i) Description of the knowledge to be acquired</b>
Introduction to HCI
HCI Goals
Cognitive and Perceptual Issues
HCI Design
Data Gathering and Analysis
Task Description and Analysis
Interaction Styles
Interaction Frameworks
Prototyping
Evaluation

#### 4 - Development of Learning Outcomes in Domains of Learning

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.

#### a. Knowledge

##### (ii) Teaching strategies to be used to develop that knowledge

###### Lectures

- Instructor teaches the topics of the course using slides published on his website before the lecture session and the students take notes and discuss with the instructor.
- Student learning outcomes related to the topics covered in the lecture sessions are measured by research report, two tests, and final exam.
- A research work is assigned to the students during the semester to measure the ability of students to distinguish between good and bad elements in a human-computer interface.
- Students will take two tests during the semester at a pre-announced time. These tests will cover the topics given up to the date of the test.
- The model answer for each of the test is presented in a lecture session for the students to check their answers with and to ensure that the learning objectives are fulfilled.
- At the end of the semester there will be one major final exam that would cover all the main topics of the course.

###### Lab

- During the lab session, topics covered in lecture sessions are practiced.
- Student learning outcomes related to topics covered in lab sessions are measured by a lab homework assignment and a project.
- A homework problem related to programming of a user interface will be assigned in the lab sessions during the semester.
- A group project related to all topics covered in the lecture and lab sessions will be assigned in the lab sessions during the semester. The project is divided into phases where each phase is assigned to the students after covering it in the lectures and practicing it in the lab.

##### (iii) Methods of assessment of knowledge acquired

1	Final Exam
2	Test 1
3	Test 2
4	Research Report
5	Lab Project
6	Lab Homework

#### b. Cognitive Skills

##### (i) Cognitive skills to be developed

##### (ii) Teaching strategies to be used to develop these cognitive skills.

##### (iii) Methodes of assessment of student's cognitive skills.

**c. Interpersonal Skills and Responsibility**

**(i) Description of the interpersonal skills and capacity to carry responsibility to be developed.**

**(ii) Teaching strategies to be used to develop these skills and abilities**

**(iii) Methods of assessment of student's interpersonal skills and capacity to carry responsibility**

**d. Communication, Information Technology and Numerical Skills.**

**(i) Description of the skills to be developed in this domain.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's numerical and communication skills.**

**e. Psychomotor Skills (if applicable)**

**(i) Description of the psychomotor skills to be developed and level of performance required.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's psychomotor skills.**



## 5 - Schedule of Assessment Tasks for Students During the Semester

Assessment	Assessment task (eg. essay, test, group project, examination, etc)	Week due	Proportion of final Assessment
1	Final Exam		40
2	Test 1		15
3	Test 2		15
4	Research Report		10
5	Lab Project		15
6	Lab Homework		5

### D. Student Support

**1 - Arrangements for availability of faculty for individual student consultations and academic advice. (include amount of time faculty are available each week)**

### E. Learning Resources

<b>1 - Required Text(s).</b> Rogers, Helen Sharp, Jenny Preece, "Interaction Design: Beyond Human-Computer Interaction", Wiley; 3 edition (June 21, 2011) ISBN-13 9780470665763 ISBN-10 0470665769
<b>2 - Essential References</b> Rogers, Helen Sharp, Jenny Preece, "Interaction Design: Beyond Human-Computer Interaction", Wiley; 3 edition (June 21, 2011) ISBN-13 9780470665763 ISBN-10 0470665769
<b>3 - Recommended Books and Reference Material (Journals, Reports, ets) (Attach List)</b>
<b>4 - Electronic Materials, Web Sites etc.</b>
<b>5 - Other Learning material such as computer-based programs/CD, professional standards/regulations</b>

### F. Facilities Required

<b>Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)</b>
<b>1. Accommodation (Lecture rooms, laboratories, etc.)</b>
<b>2. Computing resources</b>
<b>3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)</b>

## **G . Course Evaluation and Improvement Processes**

<b>1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching</b>
<b>2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department</b>
<b>3 Processes for Improvement of Teaching</b>
<b>4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)</b>
<b>5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.</b>

# Course Specification

Institution	King Abdulaziz University
College / Department	Faculty of Computing and Information Technology / Computer Science

## A - Course Identification and General Information

<b>1 - Course Title and code:</b>
Internet Application Programming / CPCS-403
<b>2 - Credit hours:</b>
3
<b>3 - Program in which the course is offered:</b>
B.S.Computer Science
<b>4 - Name of Faculty member responsible for the course</b>
Dr. Imtiaz Hussain Khan
<b>5 - Level/year at which this course is offered</b>
Senior - 400
<b>6 - Co-requisites for this course (if any)</b>
<b>7 - Pre-requisites for this course (if any)</b>
CPCS-371 CPCS-324
<b>8 - Location if not offered in main campus</b>
Boys - Sulimania , Girls - Sulimania , Girls - Faisalia , Boys - North Jeddah , Girls - North Jeddah

## B - Objectives

<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>
1 Describe the Web fundamentals, including Web Directory Structure.
2 Distinguish between two- and three-tiered Web Architectures.
3 Differentiate between client- and server-side programming.
4 Develop static Web pages, including lists, tables and forms using XHTML.
5 Write XHTML programs to navigate from one page to another.
6 Use W3C validation service to validate XHTML pages.
7 Distinguish between inline, embedded and external styles.
8 Use CSS to apply a uniform formatting to all pages in a Website.
9 Write simple JavaScripts, including (array) variables, selection statements and loops.

<b>1 - Summary of the main learning outcomes for students enrolled in the course</b>	
10	Develop (simple) dynamic Web pages using JavaScripts.
11	Write JavaScripts for client-side form validation.
12	Use Document Object Model (DOM) to create dynamic Web pages.
13	Distinguish between inline and traditional model of event handling.
14	Write simple event handlers that respond to various mouse events, including mouse move/click.
15	Discuss the functionality of a Web server.
16	Write regular expressions in PHP to search for patterns.
17	Write PHP scripts for server-side form processing, including form validation.
18	Use SQL to perform various database operations.
19	Write PHP scripts to interact with a MySQL database.
20	Discuss different XML technologies.
21	Create DTDs and Schemas for specifying the structure of an XML document.
22	Compare traditional Web applications with AJAX technology.
23	Build (simple) state-of-the-art professional Websites using the technologies learnt in this course.
24	Work in groups.
<b>2 - Briefly describe any plans for developing and improving the course that are being implemented.</b>	

**C - Course Description** ( Note: General description in the form to be used for the Bulletin or Handbook should be attached)

<b>1 - Topics to be Covered:</b>
This optional course is designed for senior-level Computer Science students to give them a broad overview of the Internet and Web technologies. The students will learn fundamentals in Web programming: XHTML, CSS, client-side scripting (JavaScript) server-side scripting (PHP) and Web data-base connectivity; they will also be familiarized with XML Technologies. The students will be encouraged to design, implement and evaluate small-scaled Web projects, in groups/team.

<b>2 - Course components (total contact hours per semester):</b>			
Lecture:	Tutorial:	Practical/Fieldwork/Internship	Other
3	1	0	

<b>3 - Additional private study/learning hours expected for students per week. (This should be an average for the semester not a specific requirement in each week):</b>

<b>4 - Development of Learning Outcomes in Domains of Learning</b>
For each of the domains of learning shown below indicate:
- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.

#### 4 - Development of Learning Outcomes in Domains of Learning

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.

##### a. Knowledge

###### (i) Description of the knowledge to be acquired

Introduction to Internet and Web technologies

Introduction to XHTML

CSS

Client-side programming

Server-side programming

Overview of XML technologies

###### (ii) Teaching strategies to be used to develop that knowledge

###### Lectures

Instructor will teach the topics of the course emphasizing on related course learning outcomes (CLOs), using multimedia aid. Students will be provided with the lecture slides and will be encouraged to read the selected topics from the text book, and occasionally from the Web. The course learning outcomes will be measured by quizzes, lab and homework assignments (individual), a group project, two sessionals tests and one final exam. The solutions to the quizzes and sessional tests will be discussed in the class. Occasionally, the instructor will bring selected problem sets and solve them on the board in an interactive session, whereby various possible solutions to the problem will be discussed. The latter activity is expected to enhance the creativity and analytical skills of the students.

###### Labs

During the lab sessions, the students will be required to build static- and dynamic- Web pages using the techniques learnt in the course. The lab instructor/ demonstrator will maintain the lab manual and guide the students during the lab sessions.

###### Class participation

Students' attendance and class participation will be continuously monitored and will be reflected in their final grades.

###### (iii) Methods of assessment of knowledge acquired

1	Final Exam
2	Midterm Exam 1
3	Midterm Exam 2
4	Quiz
5	Quiz
6	Quiz
7	Quiz
8	Group Project (including report and presentation)
9	Individual Programming Assignment # 1
10	Individual Programming Assignment # 2

##### b. Cognitive Skills

###### (i) Cognitive skills to be developed

###### (ii) Teaching strategies to be used to develop these cognitive skills.

###### (iii) Methodes of assessment of student's cognitive skills.

**c. Interpersonal Skills and Responsibility**

**(i) Description of the interpersonal skills and capacity to carry responsibility to be developed.**

**(ii) Teaching strategies to be used to develop these skills and abilities**

**(iii) Methods of assessment of student's interpersonal skills and capacity to carry responsibility**

**d. Communication, Information Technology and Numerical Skills.**

**(i) Description of the skills to be developed in this domain.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's numerical and communication skills.**

**e. Psychomotor Skills (if applicable)**

**(i) Description of the psychomotor skills to be developed and level of performance required.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's psychomotor skills.**

## 5 - Schedule of Assessment Tasks for Students During the Semester

Assessment	Assessment task (eg. essay, test, group project, examination, etc)	Week due	Proportion of final Assessment
1	Final Exam		30
2	Midterm Exam 1		15
3	Midterm Exam 2		15
4	Quiz		2.5
5	Quiz		2.5
6	Quiz		2.5
7	Quiz		2.5
8	Group Project (including report and presentation)		20
9	Individual Programming Assignment # 1		5
10	Individual Programming Assignment # 2		5

## D. Student Support

1 - Arrangements for availability of faculty for individual student consultations and academic advice. (include amount of time faculty are available each week)

## E. Learning Resources

<b>1 - Required Text(s).</b> Deitel, "Internet and World Wide Web: How to Program", Pearson Education (Prentice Hall), 4th Edition, 2009 ISBN-13 9780131752429 ISBN-10 0131752421
<b>2 - Essential References</b> Deitel, "Internet and World Wide Web: How to Program", Pearson Education (Prentice Hall), 4th Edition, 2009 ISBN-13 9780131752429 ISBN-10 0131752421
<b>3 - Recommended Books and Reference Material (Journals, Reports, ets) (Attach List)</b>
<b>4 - Electronic Materials, Web Sites etc.</b>
<b>5 - Other Learning material such as computer-based programs/CD, professional standards/regulations</b>

## F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)
<b>1. Accommodation (Lecture rooms, laboratories, etc.)</b>
<b>2. Computing resources</b>
<b>3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)</b>

## **G . Course Evaluation and Improvement Processes**

<b>1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching</b>
<b>2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department</b>
<b>3 Processes for Improvement of Teaching</b>
<b>4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)</b>
<b>5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.</b>



# Course Specification

Institution	King Abdulaziz University
College / Department	Faculty of Computing and Information Technology / Computer Science

## A - Course Identification and General Information

<b>1 - Course Title and code:</b>
Object-Oriented Analysis and Design / CPCS-454
<b>2 - Credit hours:</b>
3
<b>3 - Program in which the course is offered:</b>
B.S.Computer Science
<b>4 - Name of Faculty member responsible for the course</b>
Dr. Muhammad Yahya Dahab
<b>5 - Level/year at which this course is offered</b>
Senior - 400
<b>6 - Co-requisites for this course (if any)</b>
<b>7 - Pre-requisites for this course (if any)</b>
CPCS-351
<b>8 - Location if not offered in main campus</b>
Boys - Sulimania , Girls - Sulimania , Girls - Faisalia , Boys - North Jeddah , Girls - North Jeddah

## B - Objectives

<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>
1 To be familiar with the analysis and design cycle.
2 To understand the role of the object-oriented method on analysis and design processes.
3 To be able to document the requirements of software systems.
4 To be familiar with the Unified Modeling Language (UML).
5 To be familiar with the specific features of the Object-Oriented Method.
6 To be familiar with the CASE tools.
<b>2 - Briefly describe any plans for developing and improving the course that are being implemented.</b>

**C - Course Description** ( Note: General description in the form to be used for the Bulletin or Handbook should be attached)

**1 - Topics to be Covered:**

This course aims to familiarize students with the fundamental foundations of Object-Oriented Approach in relation to systems and the advantages of this method.

**2 - Course components (total contact hours per semester):**

Lecture:	Tutorial:	Practical/Fieldwork/Internship	Other
3	0	0	

**3 - Additional private study/learning hours expected for students per week. (This should be an average for the semester not a specific requirement in each week):**

**4 - Development of Learning Outcomes in Domains of Learning**

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.

**a. Knowledge**

**(i) Description of the knowledge to be acquired**

**(ii) Teaching strategies to be used to develop that knowledge**

**(iii) Methods of assessment of knowledge acquired**

**b. Cognitive Skills**

**(i) Cognitive skills to be developed**

**(ii) Teaching strategies to be used to develop these cognitive skills.**

**(iii) Methodes of assessment of student's cognitive skills.**

**c. Interpersonal Skills and Responsibility**

**(i) Description of the interpersonal skills and capacity to carry responsibility to be developed.**

**(ii) Teaching strategies to be used to develop these skills and abilities**

**(iii) Methods of assessment of student's interpersonal skills and capacity to carry responsibility**

**d. Communication, Information Technology and Numerical Skills.**

**(i) Description of the skills to be developed in this domain.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's numerical and communication skills.**

**e. Psychomotor Skills (if applicable)**

**(i) Description of the psychomotor skills to be developed and level of performance required.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's psychomotor skills.**

## 5 - Schedule of Assessment Tasks for Students During the Semester

Assessment	Assessment task (eg. essay, test, group project, examination, etc)	Week due	Proportion of final Assessment

## D. Student Support

**1 - Arrangements for availability of faculty for individual student consultations and academic advice. (include amount of time faculty are available each week)**

## E. Learning Resources

### 1 - Required Text(s).

Dennis, Barbara Haley Wixom, David Tegarden, "Systems Analysis and Design with UML Version 2.0: An Object-Oriented Approach", Wiley, 2nd Edition, 2004  
ISBN-13 9780471348061 ISBN-10 0471348066

### 2 - Essential References

Dennis, Barbara Haley Wixom, David Tegarden, "Systems Analysis and Design with UML Version 2.0: An Object-Oriented Approach", Wiley, 2nd Edition, 2004  
ISBN-13 9780471348061 ISBN-10 0471348066

### 3 - Recommended Books and Reference Material (Journals, Reports, ets) (Attach List)

### 4 - Electronic Materials, Web Sites etc.

### 5 - Other Learning material such as computer-based programs/CD, professional standards/regulations

## F. Facilities Required

**Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)**

### 1. Accommodation (Lecture rooms, laboratories, etc.)

### 2. Computing resources

### 3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)

## **G . Course Evaluation and Improvement Processes**

<b>1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching</b>
<b>2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department</b>
<b>3 Processes for Improvement of Teaching</b>
<b>4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)</b>
<b>5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.</b>

# Course Specification

Institution	King Abdulaziz University
College / Department	Faculty of Computing and Information Technology / Computer Science

## A - Course Identification and General Information

<b>1 - Course Title and code:</b>
Software Engineering Theory / CPCS-457
<b>2 - Credit hours:</b>
3
<b>3 - Program in which the course is offered:</b>
B.S.Computer Science
<b>4 - Name of Faculty member responsible for the course</b>
Prof. Radi Abdulrahman Teleb
<b>5 - Level/year at which this course is offered</b>
Senior - 400
<b>6 - Co-requisites for this course (if any)</b>
<b>7 - Pre-requisites for this course (if any)</b>
CPCS-351
<b>8 - Location if not offered in main campus</b>
Boys - Sulimania , Girls - Sulimania , Girls - Faisalia , Boys - North Jeddah , Girls - North Jeddah

## B - Objectives

<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>
<b>2 - Briefly describe any plans for developing and improving the course that are being implemented.</b>

**C - Course Description** ( Note: General description in the form to be used for the Bulletin or Handbook should be attached)

<b>1 - Topics to be Covered:</b>

<b>2 - Course components (total contact hours per semester):</b>			
Lecture:	Tutorial:	Practical/Fieldwork/Internship	Other
3	0	0	

<b>3 - Additional private study/learning hours expected for students per week. (This should be an average for the semester not a specific requirement in each week):</b>

<b>4 - Development of Learning Outcomes in Domains of Learning</b> For each of the domains of learning shown below indicate: - A brief summary of the knowledge or skill the course is intended to develop; - A description of the teaching strategies to be used in the course to develop that knowledge or skill; - The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.
<b>a. Knowledge</b>
(i) Description of the knowledge to be acquired
(ii) Teaching strategies to be used to develop that knowledge
(iii) Methods of assessment of knowledge acquired
<b>b. Cognitive Skills</b>
(i) Cognitive skills to be developed
(ii) Teaching strategies to be used to develop these cognitive skills.
(iii) Methodes of assessment of student's cognitive skills.

**c. Interpersonal Skills and Responsibility**

**(i) Description of the interpersonal skills and capacity to carry responsibility to be developed.**

**(ii) Teaching strategies to be used to develop these skills and abilities**

**(iii) Methods of assessment of student's interpersonal skills and capacity to carry responsibility**

**d. Communication, Information Technology and Numerical Skills.**

**(i) Description of the skills to be developed in this domain.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's numerical and communication skills.**

**e. Psychomotor Skills (if applicable)**

**(i) Description of the psychomotor skills to be developed and level of performance required.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's psychomotor skills.**



## 5 - Schedule of Assessment Tasks for Students During the Semester

Assessment	Assessment task (eg. essay, test, group project, examination, etc)	Week due	Proportion of final Assessment

## D. Student Support

**1 - Arrangements for availability of faculty for individual student consultations and academic advice. (include amount of time faculty are available each week)**

## E. Learning Resources

<b>1 - Required Text(s).</b> Pressman, "Software Engineering: A Practitioner's Approach", McGraw-Hill Science/Engineering/Math; 7 edition (January 20, 2009) ISBN-13 9780073375977 ISBN-10 0073375977
<b>2 - Essential References</b> Pressman, "Software Engineering: A Practitioner's Approach", McGraw-Hill Science/Engineering/Math; 7 edition (January 20, 2009) ISBN-13 9780073375977 ISBN-10 0073375977
<b>3 - Recommended Books and Reference Material (Journals, Reports, ets) (Attach List)</b>
<b>4 - Electronic Materials, Web Sites etc.</b>
<b>5 - Other Learning material such as computer-based programs/CD, professional standards/regulations</b>

## F. Facilities Required

<b>Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)</b>
<b>1. Accommodation (Lecture rooms, laboratories, etc.)</b>
<b>2. Computing resources</b>
<b>3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)</b>

## **G . Course Evaluation and Improvement Processes**

<b>1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching</b>
<b>2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department</b>
<b>3 Processes for Improvement of Teaching</b>
<b>4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)</b>
<b>5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.</b>

# Course Specification

Institution	King Abdulaziz University
College / Department	Faculty of Computing and Information Technology / Information System

## A - Course Identification and General Information

<b>1 - Course Title and code:</b>
Computer Architecture and Organization / CPIS-210
<b>2 - Credit hours:</b>
3
<b>3 - Program in which the course is offered:</b>
B.S.Information System
<b>4 - Name of Faculty member responsible for the course</b>
Dr. Mahmoud Ibrahim Kamel
<b>5 - Level/year at which this course is offered</b>
Sophomore - 200
<b>6 - Co-requisites for this course (if any)</b>
<b>7 - Pre-requisites for this course (if any)</b>
CPCS-202
<b>8 - Location if not offered in main campus</b>
Boys - Sulimania , Girls - Sulimania , Girls - Faisalia , Boys - North Jeddah , Girls - North Jeddah

## B - Objectives

<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>
1 Define the main components of the Combinational Logic Circuits.
2 Analyze and Design of a Simple ALU.
3 Design and Implement 4 Bit Simple ALU Using Simulink (Matlab) system.
4 Describe S-R,D,J-K and T flip flops.
5 Describe Registers.
6 Describe Memories.
7 Design and Implement 4 X3 memory Using Simulink (Matlab).
8 Analyze a simple Microprocessor.
9 Define the PC buses(PCI bus and PCI express).

<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>	
10	List the major factors which affect the performance of a PC.
11	Define 8088 microprocessor programming model.
12	Identify the Addressing Modes and the Instruction Set.
13	Design Simple Assembly Code programs.
14	Define the Physical phenomena of the different I/O devices.
15	Apply Hamming Code for EDAC.
16	Identify the different I/O Devices (Magnetic Disks, CD-ROMs,...etc).
17	Define Loosely and Closely coupled Multiprocessors.
18	Define the Clusters.
19	Analyze the Google cluster .
<b>2 - Briefly describe any plans for developing and improving the course that are being implemented.</b>	

**C - Course Description** ( Note: General description in the form to be used for the Bulletin or Handbook should be attached)

<b>1 - Topics to be Covered:</b>
Combinational Logic Circuits, ALU, Sequential Logic Circuits, Microprocessors, PC Buses, Assembly language programming, cache memory, I/O Devices, Interrupts ,DMA, introduction to high-performance techniques: Pipelining, Multiprocessing(Loosely and Closely coupled Multiprocessors, Multicomputer, Clusters)

<b>2 - Course components (total contact hours per semester):</b>			
Lecture:	Tutorial:	Practical/Fieldwork/Internship	Other
3	1	1	

<b>3 - Additional private study/learning hours expected for students per week. (This should be an average for the semester not a specific requirement in each week):</b>

<b>4 - Development of Learning Outcomes in Domains of Learning</b>
For each of the domains of learning shown below indicate:
- A brief summary of the knowledge or skill the course is intended to develop;
- Adescription of the teaching strategies to be used in the curse to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evalute learning outcomes in the domain concerned.
<b>a. Knowledge</b>
<b>(i) Description of the knowledge to be acquired</b>
Combinational Logic Circuits
ALU
Sequential Logic Circuits
Microprocessors
PC buses
Assembly Code Programming

#### 4 - Development of Learning Outcomes in Domains of Learning

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.

##### a. Knowledge

I/O Devices  
Multiprocessors  
Revision & Quiz

##### (ii) Teaching strategies to be used to develop that knowledge

###### Lectures

Instructor will teach the topics of the course emphasizing on related course learning outcomes (CLOs).  
Measuring SLO using homework assignments, midterm exam, case study projects, quizzes, and final exam.  
Informing students by their exam answers.  
Presenting student seminars for each two groups of students.

###### Homework

Assigning homework problems at end of each chapter.  
Discussing ideal solutions with students.

###### Attendance

Absence should not exceed 25% limit

##### (iii) Methods of assessment of knowledge acquired

1	Final Exam
2	Midterm Exam 1
3	Midterm Exam 2
4	Lab Test
5	Project
6	Discussion
7	Oral Exam
8	Research Report

##### b. Cognitive Skills

##### (i) Cognitive skills to be developed

##### (ii) Teaching strategies to be used to develop these cognitive skills.

##### (iii) Methodes of assessment of student's cognitive skills.

**c. Interpersonal Skills and Responsibility**

**(i) Description of the interpersonal skills and capacity to carry responsibility to be developed.**

**(ii) Teaching strategies to be used to develop these skills and abilities**

**(iii) Methods of assessment of student's interpersonal skills and capacity to carry responsibility**

**d. Communication, Information Technology and Numerical Skills.**

**(i) Description of the skills to be developed in this domain.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's numerical and communication skills.**

**e. Psychomotor Skills (if applicable)**

**(i) Description of the psychomotor skills to be developed and level of performance required.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's psychomotor skills.**

## 5 - Schedule of Assessment Tasks for Students During the Semester

Assessment	Assessment task (eg. essay, test, group project, examination, etc)	Week due	Proportion of final Assessment
1	Final Exam		30
2	Midterm Exam 1		15
3	Midterm Exam 2		15
4	Lab Test		10
5	Project		10
6	Discussion		5
7	Oral Exam		10
8	Research Report		5

### D. Student Support

1 - Arrangements for availability of faculty for individual student consultations and academic advice. (include amount of time faculty are available each week)

### E. Learning Resources

<b>1 - Required Text(s).</b> Tanenbaum, "Structured Computer Organization", Prentice Hall, 5th Edition, 2005 ISBN-13 9780131485211 ISBN-10 0131485210
<b>2 - Essential References</b> Tanenbaum, "Structured Computer Organization", Prentice Hall, 5th Edition, 2005 ISBN-13 9780131485211 ISBN-10 0131485210
<b>3 - Recommended Books and Reference Material (Journals, Reports, ets) (Attach List)</b>
<b>4 - Electronic Materials, Web Sites etc.</b>
<b>5 - Other Learning material such as computer-based programs/CD, professional standards/regulations</b>

### F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)
<b>1. Accommodation (Lecture rooms, laboratories, etc.)</b>
<b>2. Computing resources</b>
<b>3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)</b>

## **G . Course Evaluation and Improvement Processes**

<b>1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching</b>
<b>2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department</b>
<b>3 Processes for Improvement of Teaching</b>
<b>4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)</b>
<b>5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.</b>



# Course Specification

Institution	King Abdulaziz University
College / Department	Faculty of Computing and Information Technology / Information System

## A - Course Identification and General Information

<b>1 - Course Title and code:</b>	Principles of Information Systems / CPIS-220
<b>2 - Credit hours:</b>	3
<b>3 - Program in which the course is offered:</b>	B.S.Information System
<b>4 - Name of Faculty member responsible for the course</b>	Mr. Hussain Fouad Sindi
<b>5 - Level/year at which this course is offered</b>	Sophomore - 200
<b>6 - Co-requisites for this course (if any)</b>	
<b>7 - Pre-requisites for this course (if any)</b>	CPCS-202
<b>8 - Location if not offered in main campus</b>	Boys - Sulimania , Girls - Sulimania , Girls - Faisalia , Boys - North Jeddah , Girls - North Jeddah

## B - Objectives

<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>
1 Understand how and why information systems are used today.
2 Explain the technology, people, and organizational components of information systems.
3 Understand globalization and the role information systems has played in this evolution.
4 Understand how businesses are using information systems for competitive advantage vs. competitive necessity.
5 Understand the value of information systems investments as well as learn to formulate a business case for a new information system, including estimation of both costs and benefits.
6 Know the major components of an information systems infrastructure.
7 Mitigate risks as well as plan for and recover from disasters.
8 Understand how information systems are enabling new forms of commerce between individuals, organizations, and governments.
9 Be aware of emerging technologies that enable new forms of communication, collaboration, and partnering.
10 Understand how various types of information systems provide the information needed to gain business intelligence to support the decision making for the different levels and functions of the organization.
11 Understand how enterprise systems foster stronger relationships with customers and suppliers and how these systems are widely used to enforce organizational structures and processes.
12 Understand how organizations develop and acquire information systems and technologies.
13 Understand how to secure information systems resources, focusing on both human and technological safeguards.

<b>1 - Summary of the main learning outcomes for students enrolled in the course</b>
14 Evaluate the ethical concerns that information systems raise in society and the impact of information systems on crime, terrorism, and war.
<b>2 - Briefly describe any plans for developing and improving the course that are being implemented.</b>

**C - Course Description** ( Note: General description in the form to be used for the Bulletin or Handbook should be attached)

<b>1 - Topics to be Covered:</b>
The main objective of this course is to provide students with an overall understanding of the main concepts of information systems, and to highlight the importance of information systems in modern organizations and societies. It covers a range of topics including: Information, data, and system concepts; information requirements in modern organizations and businesses (including decision making, operations, and other types of requirements); introducing different types of information systems; exploring the systems development life cycle (analysis, design, and implementation); methodologies of developing information systems; managing resources of information systems (data, hardware, software ...etc.); knowledge management; quality and evaluation of information systems; ethical, social and security issues of information systems

<b>2 - Course components (total contact hours per semester):</b>			
Lecture:	Tutorial:	Practical/Fieldwork/Internship	Other
3	1	1	

<b>3 - Additional private study/learning hours expected for students per week. (This should be an average for the semester not a specific requirement in each week):</b>

<b>4 - Development of Learning Outcomes in Domains of Learning</b>
For each of the domains of learning shown below indicate:
- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.

<b>a. Knowledge</b>	
<b>(i) Description of the knowledge to be acquired</b>	
Foundations of Information System in Business Competing with Information Technology Computer Hardware Computer Software Data Resource Management Telecommunications and Network Electronic Business System Electronic Commerce System Decision Support System Developing Business/ IT Solutions	
<b>(ii) Teaching strategies to be used to develop that knowledge</b>	
<b>(iii) Methods of assessment of knowledge acquired</b>	
1	Final Exam
2	Midterm Exam1
3	Midterm Exam2
4	Lab Test
5	Graded Exercises

**b. Cognitive Skills**

**(i) Cognitive skills to be developed**

**(ii) Teaching strategies to be used to develop these cognitive skills.**

**(iii) Methodes of assessment of student's cognitive skills.**

**c. Interpersonal Skills and Responsibility**

**(i) Description of the interpersonal skills and capacity to carry responsibility to be developed.**

**(ii) Teaching strategies to be used to develop these skills and abilities**

**(iii) Methods of assessment of student's interpersonal skills and capacity to carry responsibility**

**d. Communication, Information Technology and Numerical Skills.**

**(i) Description of the skills to be developed in this domain.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's numerical and communication skills.**

**e. Psychomotor Skills (if applicable)**

**(i) Description of the psychomotor skills to be developed and level of performance required.**

(ii) Methods of assessment to be used to develop the core skills.

#### 5 - Schedule of Assessment Tasks for Students During the Semester

Assessment	Assessment task (eg. essay, test, group project, examination, etc)	Week due	Proportion of final Assessment
1	Final Exam		40
2	Midterm Exam1		15
3	Midterm Exam2		15
4	Lab Test		20
5	Graded Exercises		10

#### D. Student Support

1 - Arrangements for availability of faculty for individual student consultations and academic advice. (include amount of time faculty are available each week)

#### E. Learning Resources

##### 1 - Required Text(s).

O'Brien, George Marakas, "Introduction to Information System", McGraw-Hill International Edition, Fourteenth Edition, 2007  
ISBN-13 9780077240585 ISBN-10 0077240588

##### 2 - Essential References

O'Brien, George Marakas, "Introduction to Information System", McGraw-Hill International Edition, Fourteenth Edition, 2007  
ISBN-13 9780077240585 ISBN-10 0077240588

##### 3 - Recommended Books and Reference Material (Journals, Reports, ets) (Attach List)

##### 4 - Electronic Materials, Web Sites etc.

##### 5 - Other Learning material such as computer-based programs/CD, professional standards/regulations

#### F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)

##### 1. Accommodation (Lecture rooms, laboratories, etc.)

##### 2. Computing resources

##### 3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)

## **G . Course Evaluation and Improvement Processes**

<b>1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching</b>
<b>2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department</b>
<b>3 Processes for Improvement of Teaching</b>
<b>4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)</b>
<b>5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.</b>

# Course Specification

Institution	King Abdulaziz University
College / Department	Faculty of Computing and Information Technology / Information System

## A - Course Identification and General Information

<b>1 - Course Title and code:</b>
Database Management Systems (I) / CPIS-240
<b>2 - Credit hours:</b>
3
<b>3 - Program in which the course is offered:</b>
B.S.Information System
<b>4 - Name of Faculty member responsible for the course</b>
Prof. Shihab Ahmad Gamaleldin
<b>5 - Level/year at which this course is offered</b>
Sophomore - 200
<b>6 - Co-requisites for this course (if any)</b>
<b>7 - Pre-requisites for this course (if any)</b>
CPCS-204
<b>8 - Location if not offered in main campus</b>
Boys - Sulimania , Girls - Sulimania , Girls - Faisalia , Boys - North Jeddah , Girls - North Jeddah

## B - Objectives

<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>
1 Demonstrate the problems entailed in file-based information systems design and that motivates the use of a database system.
2 Contrast the file-based and the database methods of designing information systems.
3 Describe the 3-stage database design methodology.
4 Analyze a statement of data requirements to identify and express the different constituents of the conceptual data model.
5 Analyze a set of data forms to identify and express the different constituents of the conceptual data model.
6 Draw the conceptual data model using ERD.
7 Examine a relational database schema to identify its different constituents, such as primary keys, foreign keys, and integrity constraints.
8 Describe a relational database schema using both formal specification and diagrammatical forms.
9 Transform a conceptual data model into a relational database model.
10 Reverse engineer a relational data model into its corresponding conceptual data model.
11 Identify relational database design and update anomalies.
12 Apply normalization techniques to logical database designs up to the third normal form.
13 Build a relational database schema using the standard SQL's DDL and DML.
14 Construct SQL queries to respond to a specific information request using data aggregation, calculations, views, sub-queries, embedded queries, manipulation, and report generation.

<b>1 - Summary of the main learning outcomes for students enrolled in the course</b>	
15	Construct Relational Algebra expressions to express the answer to a specific information request.
16	Trace some of the issues regarding the physical design of a database system and its deployment.
17	Design and implement a moderate size database information system using one of the commercial DBMS systems, such as Oracle.
<b>2 - Briefly describe any plans for developing and improving the course that are being implemented.</b>	

**C - Course Description** ( Note: General description in the form to be used for the Bulletin or Handbook should be attached)

<b>1 - Topics to be Covered:</b>
<p>This course is the first in a series of courses on designing and implementing database information systems. This course is intended to prepare students to become able to implement a working database system using one of the popular commercial DBMSs, such as Oracle, MS SQL Server, or etc. The course introduces students to the concepts of databases and database modeling and design. It, in particular, provides students with a three-stages methodology for designing relational database applications, namely: conceptual, logical, and physical database modeling and design. In the first stage students will build a conceptual data model that is independent of all physical considerations. They will then transform this model in the second stage into the relational database logical model. In the third stage, students will translate the logical data model into a physical design for the target DBMS. Among the topics covered by this course are: Basic concepts of databases, the 3-stage modeling and design methodology, the concepts of the relational database, conceptual data modeling using ERD, from ERD to RDB and reverse engineering, data normalization, SQL:DDL, SQL: manipulation and query languages, relational algebra for querying.</p>

<b>2 - Course components (total contact hours per semester):</b>			
Lecture:	Tutorial:	Practical/Fieldwork/Internship	Other
3	1	1	

<b>3 - Additional private study/learning hours expected for students per week. (This should be an average for the semester not a specific requirement in each week):</b>

<b>4 - Development of Learning Outcomes in Domains of Learning</b>
<p>For each of the domains of learning shown below indicate:</p> <ul style="list-style-type: none"> <li>- A brief summary of the knowledge or skill the course is intended to develop;</li> <li>- A description of the teaching strategies to be used in the course to develop that knowledge or skill;</li> <li>- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.</li> </ul>
<b>a. Knowledge</b>
<b>(i) Description of the knowledge to be acquired</b>
<p>Introduction to Database Systems  The database environment  Fact Finding and data collection  The conceptual data model  Relational database concepts  From ERD to RDB  Data Normalization  SQL DDL  Relational Algebra as a query language  SQL query language  SQL data manipulation</p>
<b>(ii) Teaching strategies to be used to develop that knowledge</b>

**4 - Development of Learning Outcomes in Domains of Learning**

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.

**a. Knowledge****(iii) Methods of assessment of knowledge acquired**

1	Final Exam
2	Midterm Exam 1
3	Midterm Exam 2
4	Lab Work
5	Group Project
6	Homework/graded exercises

**b. Cognitive Skills****(i) Cognitive skills to be developed****(ii) Teaching strategies to be used to develop these cognitive skills.****(iii) Methodes of assessment of student's cognitive skills.****c. Interpersonal Skills and Responsibility****(i) Description of the interpersonal skills and capacity to carry responsibility to be developed.****(ii) Teaching strategies to be used to develop these skills and abilities****(iii) Methods of assessment of student's interpersonal skills and capacity to carry responsibility**



**d. Communication, Information Technology and Numerical Skills.**

**(i) Description of the skills to be developed in this domain.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's numerical and communication skills.**

**e. Psychomotor Skills (if applicable)**

**(i) Description of the psychomotor skills to be developed and level of performance required.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's psychomotor skills.**

**5 - Schedule of Assessment Tasks for Students During the Semester**

Assessment	Assessment task (eg. essay, test, group project, examination, etc)	Week due	Proportion of final Assessment
1	Final Exam		40
2	Midterm Exam 1		20
3	Midterm Exam 2		20
4	Lab Work		5
5	Group Project		10
6	Homework/graded exercises		5

## D. Student Support

**1 - Arrangements for availability of faculty for individual student consultations and academic advice. (include amount of time faculty are available each week)**

## E. Learning Resources

### 1 - Required Text(s).

Elmasri and Navathe, "Fundamentals of Database Systems", Addison Wesley, 5th Edition, 2006  
ISBN-13 9780321369574 ISBN-10 0321369572

### 2 - Essential References

Elmasri and Navathe, "Fundamentals of Database Systems", Addison Wesley, 5th Edition, 2006  
ISBN-13 9780321369574 ISBN-10 0321369572

### 3 - Recommended Books and Reference Material (Journals, Reports, ets) (Attach List)

### 4 - Electronic Materials, Web Sites etc.

### 5 - Other Learning material such as computer-based programs/CD, professional standards/regulations

## F. Facilities Required

**Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)**

### 1. Accommodation (Lecture rooms, laboratories, etc.)

### 2. Computing resources

### 3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)

## G . Course Evaluation and Improvement Processes

### 1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching

### 2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department

### 3 Processes for Improvement of Teaching

**4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)**

### 5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.

# Course Specification

Institution	King Abdulaziz University
College / Department	Faculty of Computing and Information Technology / Information System

## A - Course Identification and General Information

<b>1 - Course Title and code:</b>	Software Engineering / CPIS-250
<b>2 - Credit hours:</b>	3
<b>3 - Program in which the course is offered:</b>	B.S.Information System
<b>4 - Name of Faculty member responsible for the course</b>	Prof. Muhammad Ahmad Alfayoumi
<b>5 - Level/year at which this course is offered</b>	Sophomore - 200
<b>6 - Co-requisites for this course (if any)</b>	
<b>7 - Pre-requisites for this course (if any)</b>	CPCS-204
<b>8 - Location if not offered in main campus</b>	Boys - Sulimania , Girls - Sulimania , Girls - Faisalia , Boys - North Jeddah , Girls - North Jeddah

## B - Objectives

<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>
1 Explain the key role of a systems analyst in business
2 Describe the various types of systems an analyst might work on
3 Explain the importance of technical, people, and business
4 skills for an analyst
5 Explain why ethical behavior is crucial for a systems analyst's career
6 Describe various job titles in the field and places of employment where analysis and design work is done
7 Discuss the analyst's role in strategic planning for an organization
8 Describe the analyst's role in a system development project
9 Explain the purpose and various phases of the systems development life cycle (SDLC)p
10 Explain the elements of project management and the responsibilities of a project manager
11 Explain project initiation and the activities in the project planning phase of the SDLC
12 Describe how the scope of the new system is determined
13 Develop a project schedule using Gantt charts
14 Develop a cost/benefit analysis and assess the feasibility of a proposed project
15 Describe the activities of systems analysis
16 Explain the difference between functional and nonfunctional system requirements

<b>1 - Summary of the main learning outcomes for students enrolled in the course</b>	
17	Describe three types of models and reasons for creating models
18	Identify and understand the different types of users who will be involved in investigating system requirements
19	Describe the kind of information that is required to develop system requirements
20	Determine system requirements through review of documentation, interviews, observation, prototypes, questionnaires, joint application design sessions, and vendor research
21	Discuss the need for validation of system requirements to ensure accuracy and completeness and the use of a structured walkthrough
22	Explain why identifying use cases is the key to defining functional requirements
23	Use three techniques for identifying use cases
24	Write brief, intermediate, and fully developed use case descriptions
25	Identify and analyze data entities and domain classes needed in the system
26	Read, interpret, and create an entity-relationship diagram
27	Explain how the traditional approach and the object-oriented approach differ when modeling the details of a use case
28	List the components of a traditional system and the symbols representing them on a data flow diagram
29	Describe how data flow diagrams can show the system at various levels of abstraction
30	Develop data flow diagrams, data element definitions, data store definitions, and process descriptions
31	Understand and define requirements for a new system using object-oriented analysis models and techniques
32	Understand and define object-oriented modeling notation using Unified Modeling Language (UML 2.0)
33	Determine alternative approaches for system implementation
34	Evaluate and select an implementation approach based on the needs and resources of the organization
35	Describe key elements of a request for proposal (RFP) and evaluate vendors' proposals for outsourced alternatives
36	Explain when to use an adaptive approach to the SDLC in place of a more predictive traditional SDLC
37	Explain the differences between a model, a tool, a technique, and a methodology
38	Describe the two overall approaches used to develop information systems: the traditional method and the object-oriented method
<b>2 - Briefly describe any plans for developing and improving the course that are being implemented.</b>	

**C - Course Description** ( Note: General description in the form to be used for the Bulletin or Handbook should be attached)

<b>1 - Topics to be Covered:</b>
Foundation for systems development, Methodologies of IS development, Software process models, Process iteration, Process activities, project management: Project scope. Project management life cycle, Managing IS Project, planning IS project, feasibility study of IS project. Models of the Software Development. Determining system requirements (Functional and non-functional requirements). Traditional approach :data modelling and E-R-D Model. Object-Oriented Analysis and modeling: Systems structure modelling, Object, class, attributes, methods, Classes relationships: Generalization, Specialization, Association. Class diagrams, Object-Oriented Analysis and modeling .

<b>2 - Course components (total contact hours per semester):</b>			
Lecture:	Tutorial:	Practical/Fieldwork/Internship	Other
3	1	1	

**3 - Additional private study/learning hours expected for students per week. (This should be an average for the semester not a specific requirement in each week):**

<b>4 - Development of Learning Outcomes in Domains of Learning</b>
For each of the domains of learning shown below indicate:
- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.

#### 4 - Development of Learning Outcomes in Domains of Learning

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.

##### a. Knowledge

###### (i) Description of the knowledge to be acquired

Foundation for systems development:

Methodology :Models ,tools , and Techniques.

Software Processes

Planning phase of IS project

Analysis Phase activities

Structuring system Approach(Traditinal) Modelling system req.

Object-Oriented analysis and modelling

UML MODELLS for OOA

System Aricticture and specificatios.

###### (ii) Teaching strategies to be used to develop that knowledge

###### Lecture

Instructor will teach the

topics of the course emphasizing on related course learning objectives (CLOs),

while student will take notes and read in the text book.

Student learning outcomes

will be measured by homework assignments, Midterm Exams , Lab exercises, lab project, and final exam

At the end of each chapter,

students will have a quiz related to the topics of each chapter. These quizzes will fulfill some of the CLOs.

Student will be informed by

the correct answers of taken exams to insure that the learning objectives are fulfilled.

Students will be divided into

teams (2 to3students per team), each team will be asked to submit a report for lab project at a pre-announced time.

Students will take 2 mid-term

exams at a pre-announced time. The exam will be discussed in class to high light on the common mistakes that have been appeared in the answer sheets

At the end of the semester

there will be one major final exam that would cover all the main topics of the course

###### Labs

During the Lab session, some

difficult problems will be selected and solved by the LAB instructor.

Students will be divided into teams. Each team will present the solution of some homework problem.

LAB Instructor will guide the students during the lab session.

###### Attendance

Regular attendance of the students will enhance their final grades.

When the absence exceeds the 25 % limit (~ 10 sessions), a report will be send to the Academic Affairs to take the necessary action. As a result, the student may get DN or AF in the course

###### (iii) Methods of assessment of knowledge acquired

1	Final Exam
2	Midterm Exam 1
3	Midterm Exam 2
4	Quiz 1
5	Quiz 2
6	LAB Exam
7	LAB Project

**b. Cognitive Skills**

**(i) Cognitive skills to be developed**

**(ii) Teaching strategies to be used to develop these cognitive skills.**

**(iii) Methodes of assessment of student's cognitive skills.**

**c. Interpersonal Skills and Responsibility**

**(i) Description of the interpersonal skills and capacity to carry responsibility to be developed.**

**(ii) Teaching strategies to be used to develop these skills and abilities**

**(iii) Methods of assessment of student's interpersonal skills and capacity to carry responsibility**

**d. Communication, Information Technology and Numerical Skills.**

**(i) Description of the skills to be developed in this domain.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's numerical and communication skills.**

**e. Psychomotor Skills (if applicable)**

**(i) Description of the psychomotor skills to be developed and level of performance required.**

(ii) Methods of assessment to be used to develop the core skills.

#### 5 - Schedule of Assessment Tasks for Students During the Semester

Assessment	Assessment task (eg. essay, test, group project, examination, etc)	Week due	Proportion of final Assessment
1	Final Exam		40
2	Midterm Exam 1		15
3	Midterm Exam 2		15
4	Quiz 1		5
5	Quiz 2		5
6	LAB Exam		5
7	LAB Project		15

#### D. Student Support

1 - Arrangements for availability of faculty for individual student consultations and academic advice. (include amount of time faculty are available each week)

#### E. Learning Resources

##### 1 - Required Text(s).

Satzinger, Robert B. Jackson, Stephen D. Burd, "Systems Analysis and Design in a Changing World", Course Technology; 5 edition (March 28, 2008)  
ISBN-13 9781423902287 ISBN-10 1423902289

##### 2 - Essential References

Satzinger, Robert B. Jackson, Stephen D. Burd, "Systems Analysis and Design in a Changing World", Course Technology; 5 edition (March 28, 2008)  
ISBN-13 9781423902287 ISBN-10 1423902289

##### 3 - Recommended Books and Reference Material (Journals, Reports, ets) (Attach List)

##### 4 - Electronic Materials, Web Sites etc.

##### 5 - Other Learning material such as computer-based programs/CD, professional standards/regulations

## **F. Facilities Required**

Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)

**1. Accommodation (Lecture rooms, laboratories, etc.)**

**2. Computing resources**

**3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)**

## **G . Course Evaluation and Improvement Processes**

**1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching**

**2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department**

**3 Processes for Improvement of Teaching**

**4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)**

**5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.**



# Course Specification

Institution	King Abdulaziz University
College / Department	Faculty of Computing and Information Technology / Information System

## A - Course Identification and General Information

<b>1 - Course Title and code:</b>
Information and Computer Security / CPIS-312
<b>2 - Credit hours:</b>
3
<b>3 - Program in which the course is offered:</b>
B.S.Information System
<b>4 - Name of Faculty member responsible for the course</b>
Dr. Daniyal Muhammad Alghazzawi
<b>5 - Level/year at which this course is offered</b>
Junior - 300
<b>6 - Co-requisites for this course (if any)</b>
<b>7 - Pre-requisites for this course (if any)</b>
CPCS-370
<b>8 - Location if not offered in main campus</b>
Boys - Sulimania , Girls - Sulimania , Girls - Faisalia , Boys - North Jeddah , Girls - North Jeddah

## B - Objectives

<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>
<b>2 - Briefly describe any plans for developing and improving the course that are being implemented.</b>

**C - Course Description** ( Note: General description in the form to be used for the Bulletin or Handbook should be attached)

**1 - Topics to be Covered:**

This course equips students with the scientific, mathematical concepts and skills related to information security. It covers the topics of security of information and software systems including attacks and data encryption. It also explains the mathematical foundations and algorithms of cryptography and the ways of distributing keys. It covers the techniques of data protection over computer networks and controlling access using passwords.

**2 - Course components (total contact hours per semester):**

Lecture:	Tutorial:	Practical/Fieldwork/Internship	Other
3	1	1	

**3 - Additional private study/learning hours expected for students per week. (This should be an average for the semester not a specific requirement in each week):**

**4 - Development of Learning Outcomes in Domains of Learning**

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.

**a. Knowledge**

**(i) Description of the knowledge to be acquired**

- Introduction to Information security
- Classic Cryptography
- Symmetric Cryptography
- Public Key Cryptography
- Hash Function
- Authentication
- Simple Authentication Protocols
- Real world security protocols
- Software flaws and malware
- Insecurity in software
- Operating systems and security

**(ii) Teaching strategies to be used to develop that knowledge**

**(iii) Methods of assessment of knowledge acquired**

**b. Cognitive Skills**

**(i) Cognitive skills to be developed**

**(ii) Teaching strategies to be used to develop these cognitive skills.**

**(iii) Methodes of assessment of student's cognitive skills.**

**c. Interpersonal Skills and Responsibility**

**(i) Description of the interpersonal skills and capacity to carry responsibility to be developed.**

**(ii) Teaching strategies to be used to develop these skills and abilities**

**(iii) Methods of assessment of student's interpersonal skills and capacity to carry responsibility**

**d. Communication, Information Technology and Numerical Skills.**

**(i) Description of the skills to be developed in this domain.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's numerical and communication skills.**

**e. Psychomotor Skills (if applicable)**

**(i) Description of the psychomotor skills to be developed and level of performance required.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's psychomotor skills.**

## 5 - Schedule of Assessment Tasks for Students During the Semester

Assessment	Assessment task (eg. essay, test, group project, examination, etc)	Week due	Proportion of final Assessment

## D. Student Support

1 - Arrangements for availability of faculty for individual student consultations and academic advice. (include amount of time faculty are available each week)

## E. Learning Resources

<b>1 - Required Text(s).</b> Pfleeger, Shari Lawrence Pfleeger, "Security in Computing", Prentice Hall, 4th Edition, 2006 ISBN-13 9780132390774 ISBN-10 0132390779
<b>2 - Essential References</b> Pfleeger, Shari Lawrence Pfleeger, "Security in Computing", Prentice Hall, 4th Edition, 2006 ISBN-13 9780132390774 ISBN-10 0132390779
<b>3 - Recommended Books and Reference Material (Journals, Reports, ets) (Attach List)</b>
<b>4 - Electronic Materials, Web Sites etc.</b>
<b>5 - Other Learning material such as computer-based programs/CD, professional standards/regulations</b>

## F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)
<b>1. Accommodation (Lecture rooms, laboratories, etc.)</b>
<b>2. Computing resources</b>
<b>3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)</b>

## **G . Course Evaluation and Improvement Processes**

<b>1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching</b>
<b>2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department</b>
<b>3 Processes for Improvement of Teaching</b>
<b>4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)</b>
<b>5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.</b>

# Course Specification

Institution	King Abdulaziz University
College / Department	Faculty of Computing and Information Technology / Information System

## A - Course Identification and General Information

<b>1 - Course Title and code:</b>	Decision Support Systems and Theory / CPIS-320
<b>2 - Credit hours:</b>	3
<b>3 - Program in which the course is offered:</b>	B.S.Information System
<b>4 - Name of Faculty member responsible for the course</b>	Prof. Khaled Abdullah Fakeeh
<b>5 - Level/year at which this course is offered</b>	Junior - 300
<b>6 - Co-requisites for this course (if any)</b>	
<b>7 - Pre-requisites for this course (if any)</b>	CPIS-220
<b>8 - Location if not offered in main campus</b>	Boys - Sulimania , Girls - Sulimania , Girls - Faisalia , Boys - North Jeddah , Girls - North Jeddah

## B - Objectives

<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>	
1	Understand today's turbulent business environment and describe how organizations survive and even excel in such an environment.
2	Understand the need for computerized support of managerial decision making.
3	Learn the conceptual foundation of the decision support system (DSS) and business intelligence (BI) methodology and relate them each other.
4	List the major tools of computerized decision support and major issues in implementing computerized decision support systems.
5	Define the conceptual foundations of decision making.
6	Understand Simon's four phases of decision making: Intelligence, Design, Choice, and Implementation.
7	Differentiate between the concepts of making a choice and establishing a principle of choice.
8	Group discussion using their own experience about DSS issues, and implementation in today's business environment.
9	Describe the key differences and similarities between DSS and BI systems.
10	Describe DSS characteristics, capabilities and configurations.
11	Describe and develop the components and structure of each DSS components: the data management subsystem, the model management subsystem, the user interface subsystem, and the knowledge-based management subsystem.
12	Explain internet impacts on DSS and vice versa also describe DSS hardware and software platforms and DSS modeling language: Planners Lab.

<b>1 - Summary of the main learning outcomes for students enrolled in the course</b>	
13	Describe the basic concepts of management support system modeling.
14	Describe how spreadsheet can be used of MSS modeling and solutions.
15	Explain the basic concept of optimization, simulation, linear programming and heuristic, and when to use them using several examples.
16	Define and explain with practical example using software about, what is meant by sensitivity analysis, what-if analysis, and goal seeking.
17	Group discussion about “data mining as an enabling technology for business intelligence, and describe the objective and benefits of business analytics and data mining”.
18	Recognize the wide range of applications of data mining and understand the standardized data mining processes.
19	Understand the steps involved in data preprocessing for data mining.
20	Learn different methods and algorithms of data mining.
<b>2 - Briefly describe any plans for developing and improving the course that are being implemented.</b>	

**C - Course Description** ( Note: General description in the form to be used for the Bulletin or Handbook should be attached)

<b>1 - Topics to be Covered:</b>
<p>This course aims to teach students to understand today's turbulent business environment and describe how organizations survive and even excel in such an environment (solving problems and exploiting opportunities. Moreover, understanding the need for computerized support of managerial decision making and what was an early framework for managerial decision making. Students will learn the List the major tools of computerized decision support and will see the major issues in implementing computerized support systems. The main objective of this course is to enable the students how DSS works. What is the purpose of DSS, and what is the theory behind different DSS techniques. This course teaches students the required skills and gives them knowledge of the various decision-making models so that decisions can be based on logical and mathematical foundations under different circumstances such as in cases of uncertainty, lack of information or certainty.</p>

<b>2 - Course components (total contact hours per semester):</b>			
Lecture:	Tutorial:	Practical/Fieldwork/Internship	Other
3	1	2	

<b>3 - Additional private study/learning hours expected for students per week. (This should be an average for the semester not a specific requirement in each week):</b>

<b>4 - Development of Learning Outcomes in Domains of Learning</b>
<p>For each of the domains of learning shown below indicate:</p> <ul style="list-style-type: none"> <li>- A brief summary of the knowledge or skill the course is intended to develop;</li> <li>- A description of the teaching strategies to be used in the course to develop that knowledge or skill;</li> <li>- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.</li> </ul>
<b>a. Knowledge</b>
<p><b>(i) Description of the knowledge to be acquired</b></p> <p>Decision Support System and Business Intelligence  Decision Making, Systems, Modeling, and Support  DSS Concepts, Methodologies, and Technologies: An Overview  Modeling and Analysis  Data Mining for Business Intelligence  Business Performance Management</p>

**4 - Development of Learning Outcomes in Domains of Learning**

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.

**a. Knowledge****(ii) Teaching strategies to be used to develop that knowledge****Lecture**

Instructor deliver lectures during the semester following the selected chapters from the prescribed book, emphasizing on course learning outcomes. Students can learn and revise all the lecture through slides, tutorial, and text book. During the lecture students learning outcomes measure by several assessment activities like mid and final exams, quizzes, assignments, projects, and research summaries/reports. Other than the two mid-term exams, in the end of the semester there is one final exam covering from all chapters is taken by instructor. For fair assessment and quality education, after every assessment student's answer sheets present to the students for error free grading.

**Lab**

Other than the lecture, every week there is a lab session for the student for practical implementation of the theory classes. There is always synchronization between the theory and lab sessions. During the lab classes, student use various programming, developing and designing tool to use different decision making analysis. In addition they use some tools to develop their own DSS system using some real world example. The lab classes also have assessment procedure, i.e. Lab project, lab exam, and research. Lab instructor maintain all the lab manuals weekly and provide a complete of copy of lab manual to student manually and electronically.

**(iii) Methods of assessment of knowledge acquired**

1	Final Exam
2	Midterm Exam
3	Midterm Exam
4	Test
5	Quiz
6	Lab Test
7	Project Report
8	Research Report
9	Discussion
10	Graded Exercises

**b. Cognitive Skills****(i) Cognitive skills to be developed****(ii) Teaching strategies to be used to develop these cognitive skills.****(iii) Methodes of assessment of student's cognitive skills.**



**c. Interpersonal Skills and Responsibility**

**(i) Description of the interpersonal skills and capacity to carry responsibility to be developed.**

**(ii) Teaching strategies to be used to develop these skills and abilities**

**(iii) Methods of assessment of student's interpersonal skills and capacity to carry responsibility**

**d. Communication, Information Technology and Numerical Skills.**

**(i) Description of the skills to be developed in this domain.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's numerical and communication skills.**

**e. Psychomotor Skills (if applicable)**

**(i) Description of the psychomotor skills to be developed and level of performance required.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's psychomotor skills.**

## 5 - Schedule of Assessment Tasks for Students During the Semester

Assessment	Assessment task (eg. essay, test, group project, examination, etc)	Week due	Proportion of final Assessment
1	Final Exam		30
2	Midterm Exam		15
3	Midterm Exam		15
4	Test		10
5	Quiz		5
6	Lab Test		10
7	Project Report		5
8	Research Report		2.5
9	Discussion		5
10	Graded Exercises		2.5

### D. Student Support

1 - Arrangements for availability of faculty for individual student consultations and academic advice. (include amount of time faculty are available each week)

### E. Learning Resources

<b>1 - Required Text(s).</b> Turban, Ramesh Sharda, Dursun Delen, "Decision Support and Business Intelligence Systems", Prentice Hall, 9 Edition, 2010 ISBN-13 9780136107293 ISBN-10 013610729X
<b>2 - Essential References</b> Turban, Ramesh Sharda, Dursun Delen, "Decision Support and Business Intelligence Systems", Prentice Hall, 9 Edition, 2010 ISBN-13 9780136107293 ISBN-10 013610729X
<b>3 - Recommended Books and Reference Material (Journals, Reports, ets) (Attach List)</b>
<b>4 - Electronic Materials, Web Sites etc.</b>
<b>5 - Other Learning material such as computer-based programs/CD, professional standards/regulations</b>

### F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)
<b>1. Accommodation (Lecture rooms, laboratories, etc.)</b>
<b>2. Computing resources</b>
<b>3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)</b>

## **G . Course Evaluation and Improvement Processes**

<b>1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching</b>
<b>2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department</b>
<b>3 Processes for Improvement of Teaching</b>
<b>4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)</b>
<b>5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.</b>

# Course Specification

Institution	King Abdulaziz University
College / Department	Faculty of Computing and Information Technology / Information System

## A - Course Identification and General Information

<b>1 - Course Title and code:</b>	Introduction to Software Project Management / CPIS-334
<b>2 - Credit hours:</b>	3
<b>3 - Program in which the course is offered:</b>	B.S.Information System
<b>4 - Name of Faculty member responsible for the course</b>	Dr. Othman Ali Khan
<b>5 - Level/year at which this course is offered</b>	Junior - 300
<b>6 - Co-requisites for this course (if any)</b>	
<b>7 - Pre-requisites for this course (if any)</b>	
<b>8 - Location if not offered in main campus</b>	Boys - Sulimania , Girls - Sulimania , Girls - Faisalia , Boys - North Jeddah , Girls - North Jeddah

## B - Objectives

<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>	
1	Initiate, specify, and prioritize information systems projects and to determine various aspects of feasibility of these projects.
2	Understand the foundations of project management, including its definition, scope, and the need for project management in the modern organization.
3	Understand the phases of the project management lifecycle.
4	Manage project teams, including the fundamentals of leadership and team motivation.
5	Manage project communication, both internal to the team, and external to otherproject stakeholders.
6	Initiate projects, including project selection and defining project scope.
7	Manage project schedules with appropriate techniques and tools.
8	Manage project resources, including human resources, capital equipment, and time.
9	Manage project quality, including the identification of the threats to project quality, techniques for measuring project quality and the techniques for ensuring project quality is achieved.
10	Manage project risk, including the identification of project risk, and the techniques for ensuring project risk is controlled.
11	Manage the project procurement process, including understanding externalacquisition and outsourcing, as well as the steps for managing external procurement.
12	Manage project execution, including monitoring project progress and managing project change, and appropriately documenting and communicating project status.
13	Control projects through information tracking and cost and change control techniques.

<b>1 - Summary of the main learning outcomes for students enrolled in the course</b>	
14	Close projects, including administrative, personnel, and contractual closure.
15	Understand the mechanisms for dealing with legal issues in complex project contexts.
16	Appreciate ethnic cultural differences in working with global teams either internal to
17	organizations or by engaging offshore outsourcers.
<b>2 - Briefly describe any plans for developing and improving the course that are being implemented.</b>	

**C - Course Description** ( Note: General description in the form to be used for the Bulletin or Handbook should be attached)

<b>1 - Topics to be Covered:</b>
<p>This course discusses the processes, methods, techniques and tools that organizations use to manage their information systems projects. The course covers a systematic methodology for initiating, planning, executing, controlling, and closing projects. This course assumes that project management in the modern organization is a complex team based activity, where various types of technologies (including project management software as well as software to support group collaboration) are an inherent part of the project management process. This course also acknowledges that project management involves both the use of resources from within the firm, as well as contracted from outside the organization.</p>

<b>2 - Course components (total contact hours per semester):</b>			
Lecture:	Tutorial:	Practical/Fieldwork/Internship	Other
3	1	0	

<b>3 - Additional private study/learning hours expected for students per week. (This should be an average for the semester not a specific requirement in each week):</b>

<b>4 - Development of Learning Outcomes in Domains of Learning</b>
<p>For each of the domains of learning shown below indicate:</p> <ul style="list-style-type: none"> <li>- A brief summary of the knowledge or skill the course is intended to develop;</li> <li>- A description of the teaching strategies to be used in the course to develop that knowledge or skill;</li> <li>- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.</li> </ul>
<b>a. Knowledge</b>
<p><b>(i) Description of the knowledge to be acquired</b></p> <p>Project Management in the Software Development Environment</p> <p>Selecting the Best Processes</p> <p>Developing Plans</p> <p>Product Management</p> <p>Product Quality Management</p> <p>Acquisition Management</p>

**4 - Development of Learning Outcomes in Domains of Learning**

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.

**a. Knowledge****(ii) Teaching strategies to be used to develop that knowledge****Lectures**

Instructor shall teach the topics of the course related to course learning outcomes. Students are provided with power point presentation of the lectures and have been told to read various related topics from the book and where necessary search on the net. The course learning outcomes are evaluated by Final Examination, Mid Term Examinations. The answers to the various problems given in the examination are discussed in the class. Solutions are discussed in class to enhance the creativity skills of the students

**Labs/Tutorials**

In the lab sessions, students are expected to use MS-Project as a tool. The Lab Instructor/Lecturer maintains a lab manual and guides the students in the lab sessions. Sometimes some problems related to MS-Project are given to the students for completion.

**Class participation**

Students are encouraged to participate in class discussions and thus enhance their creativity and communication skills.

**Projects**

Projects are assigned to students as groups and each member of the group has to make a presentation about the work and role that he has done in the project, this encourages team work and communication skills.

**(iii) Methods of assessment of knowledge acquired**

1	Final Exam
2	Midterm Exam
3	Midterm Exam
4	Quiz
5	Lab Test
6	Project Report
7	Discussion
8	Presentation
9	Final Exam
10	Midterm Exam 1
11	Midterm Exam 2
12	Quiz
13	Lab
14	Project Report
15	Discussion
16	Presentation

**b. Cognitive Skills****(i) Cognitive skills to be developed****(ii) Teaching strategies to be used to develop these cognitive skills.****(iii) Method of assessment of student's cognitive skills.**

**c. Interpersonal Skills and Responsibility**

**(i) Description of the interpersonal skills and capacity to carry responsibility to be developed.**

**(ii) Teaching strategies to be used to develop these skills and abilities**

**(iii) Methods of assessment of student's interpersonal skills and capacity to carry responsibility**

**d. Communication, Information Technology and Numerical Skills.**

**(i) Description of the skills to be developed in this domain.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's numerical and communication skills.**

**e. Psychomotor Skills (if applicable)**

**(i) Description of the psychomotor skills to be developed and level of performance required.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's psychomotor skills.**

## 5 - Schedule of Assessment Tasks for Students During the Semester

Assessment	Assessment task (eg. essay, test, group project, examination, etc)	Week due	Proportion of final Assessment
1	Final Exam		40
2	Midterm Exam		15
3	Midterm Exam		15
4	Quiz		5
5	Lab Test		10
6	Project Report		5
7	Discussion		5
8	Presentation		5
9	Final Exam		40
10	Midterm Exam 1		15
11	Midterm Exam 2		15
12	Quiz		5
13	Lab		10
14	Project Report		5
15	Discussion		5
16	Presentation		5

### D. Student Support

**1 - Arrangements for availability of faculty for individual student consultations and academic advice. (include amount of time faculty are available each week)**

### E. Learning Resources

#### 1 - Required Text(s).

Bechtold, "Essentials of Software Project Management", Management Concepts, second Edition, 2007  
ISBN-13 9781567261868 ISBN-10 1567261868

#### 2 - Essential References

Bechtold, "Essentials of Software Project Management", Management Concepts, second Edition, 2007  
ISBN-13 9781567261868 ISBN-10 1567261868

#### 3 - Recommended Books and Reference Material (Journals, Reports, ets) (Attach List)

#### 4 - Electronic Materials, Web Sites etc.

#### 5 - Other Learning material such as computer-based programs/CD, professional standards/regulations



## **F. Facilities Required**

Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)

**1. Accommodation (Lecture rooms, laboratories, etc.)**

**2. Computing resources**

**3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)**

## **G . Course Evaluation and Improvement Processes**

**1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching**

**2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department**

**3 Processes for Improvement of Teaching**

**4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)**

**5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.**

# Course Specification

Institution	King Abdulaziz University
College / Department	Faculty of Computing and Information Technology / Information System

## A - Course Identification and General Information

<b>1 - Course Title and code:</b>
IS Analysis and Architecture Design / CPIS-351
<b>2 - Credit hours:</b>
3
<b>3 - Program in which the course is offered:</b>
B.S.Information System
<b>4 - Name of Faculty member responsible for the course</b>
Prof. Muhammad Ahmad Alfayoumi
<b>5 - Level/year at which this course is offered</b>
Junior - 300
<b>6 - Co-requisites for this course (if any)</b>
<b>7 - Pre-requisites for this course (if any)</b>
CPIS-250 BUS-232
<b>8 - Location if not offered in main campus</b>
Boys - Sulimania , Girls - Sulimania , Girls - Faisalia , Boys - North Jeddah , Girls - North Jeddah

## B - Objectives

<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>
<b>2 - Briefly describe any plans for developing and improving the course that are being implemented.</b>

**C - Course Description** ( Note: General description in the form to be used for the Bulletin or Handbook should be attached)

**1 - Topics to be Covered:**

System Architectures Design,Traditional Approach to Design and Object-Oriented Approach to Design for Applications Designing Files and Database,Designing the User interface:UI design principles,design principles,Interaction styles,The user interface design and user interface prototyping .Designing System interfaces, controls, and security.Implementation and Support issues.

**2 - Course components (total contact hours per semester):**

Lecture:	Tutorial:	Practical/Fieldwork/Internship	Other
3	0	2	

**3 - Additional private study/learning hours expected for students per week. (This should be an average for the semester not a specific requirement in each week):**

**4 - Development of Learning Outcomes in Domains of Learning**

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.

**a. Knowledge**

**(i) Description of the knowledge to be acquired**

**(ii) Teaching strategies to be used to develop that knowledge**

**(iii) Methods of assessment of knowledge acquired**

**b. Cognitive Skills**

**(i) Cognitive skills to be developed**

**(ii) Teaching strategies to be used to develop these cognitive skills.**

**(iii) Methodes of assessment of student's cognitive skills.**

**c. Interpersonal Skills and Responsibility**

**(i) Description of the interpersonal skills and capacity to carry responsibility to be developed.**

**(ii) Teaching strategies to be used to develop these skills and abilities**

**(iii) Methods of assessment of student's interpersonal skills and capacity to carry responsibility**

**d. Communication, Information Technology and Numerical Skills.**

**(i) Description of the skills to be developed in this domain.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's numerical and communication skills.**

**e. Psychomotor Skills (if applicable)**

**(i) Description of the psychomotor skills to be developed and level of performance required.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's psychomotor skills.**

## 5 - Schedule of Assessment Tasks for Students During the Semester

Assessment	Assessment task (eg. essay, test, group project, examination, etc)	Week due	Proportion of final Assessment

## D. Student Support

**1 - Arrangements for availability of faculty for individual student consultations and academic advice. (include amount of time faculty are available each week)**

## E. Learning Resources

### 1 - Required Text(s).

Satzinger, Robert B. Jackson, Stephen D. Burd, "Systems Analysis and Design in a Changing World", Course Technology; 5 edition (March 28, 2008)  
ISBN-13 9781423902287 ISBN-10 1423902289

### 2 - Essential References

Satzinger, Robert B. Jackson, Stephen D. Burd, "Systems Analysis and Design in a Changing World", Course Technology; 5 edition (March 28, 2008)  
ISBN-13 9781423902287 ISBN-10 1423902289

### 3 - Recommended Books and Reference Material (Journals, Reports, ets) (Attach List)

### 4 - Electronic Materials, Web Sites etc.

### 5 - Other Learning material such as computer-based programs/CD, professional standards/regulations

## F. Facilities Required

**Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)**

### 1. Accommodation (Lecture rooms, laboratories, etc.)

### 2. Computing resources

### 3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)

## **G . Course Evaluation and Improvement Processes**

<b>1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching</b>
<b>2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department</b>
<b>3 Processes for Improvement of Teaching</b>
<b>4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)</b>
<b>5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.</b>

# Course Specification

Institution	King Abdulaziz University
College / Department	Faculty of Computing and Information Technology / Information System

## A - Course Identification and General Information

<b>1 - Course Title and code:</b>	IS Applications Design and Development / CPIS-352
<b>2 - Credit hours:</b>	3
<b>3 - Program in which the course is offered:</b>	B.S.Information System
<b>4 - Name of Faculty member responsible for the course</b>	Dr. Adnan Mostafa Albar
<b>5 - Level/year at which this course is offered</b>	Junior - 300
<b>6 - Co-requisites for this course (if any)</b>	
<b>7 - Pre-requisites for this course (if any)</b>	CPIS-351
<b>8 - Location if not offered in main campus</b>	Boys - Sulimania , Girls - Sulimania , Girls - Faisalia , Boys - North Jeddah , Girls - North Jeddah

## B - Objectives

<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>
1 Understand a variety of frameworks for enterprise architecture analysis and decision making.
2 Evaluate the total cost of ownership and return on investment for architecture alternatives.
3 Utilize techniques for assessing and managing risk across the portfolio of the enterprise.
4 Evaluate and plan for the integration of emerging technologies.
5 Administer systems, including the use of virtualization and monitoring, power and cooling issues.
6 Manage proliferating types and volume of content.
7 Understand the core concepts of data/information architecture and evaluate existing data/information architecture designs.
8 Plan for business continuity.
9 Understand the benefits and risks of service oriented architecture.
10 Understand the role of audit and compliance in enterprise architecture.
11 Understand the integration of enterprise systems with interorganizational partners
12 such as suppliers, government, etc.
<b>2 - Briefly describe any plans for developing and improving the course that are being implemented.</b>

**C - Course Description** ( Note: General description in the form to be used for the Bulletin or Handbook should be attached)

**1 - Topics to be Covered:**

This course explores the design, selection, implementation and management of enterprise IT solutions. The focus is on applications and infrastructure and their fit with the business. Students learn frameworks and strategies for infrastructure management, system administration, data/information architecture, content management, distributed computing, middleware, legacy system integration, system consolidation, software selection, total cost of ownership calculation, IT investment analysis, and emerging technologies. These topics are addressed both within and beyond the organization, with attention paid to managing risk and security within audit and compliance standards.

Students also hone their ability to communicate technology architecture strategies concisely to a general business audience.

**2 - Course components (total contact hours per semester):**

Lecture:	Tutorial:	Practical/Fieldwork/Internship	Other
3	0	2	

**3 - Additional private study/learning hours expected for students per week. (This should be an average for the semester not a specific requirement in each week):**

**4 - Development of Learning Outcomes in Domains of Learning**

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.

**a. Knowledge**

**(i) Description of the knowledge to be acquired**

Data Warehousing  
Data Mining

**(ii) Teaching strategies to be used to develop that knowledge**

**Lectures**

Instructor will teach the topics of the course emphasizing on the course related learning objectives through three fifty minutes lecture meetings per week. Lectures will, in most cases, have a mix of formal lecturing and active learning.

**Labs**

During the tutorials (one 80 minutes meeting per week), the instructor will solve example problems related to the recently introduced topic. The instructor will also discuss with the students the problems they faced while trying to solve the assigned homework problems. Some of the tutorials are devoted for training the students on software packages and tools needed in the course.

**(iii) Methods of assessment of knowledge acquired**

**b. Cognitive Skills**

**(i) Cognitive skills to be developed**

**(ii) Teaching strategies to be used to develop these cognitive skills.**

**(iii) Methodes of assessment of student's cognitive skills.**



**c. Interpersonal Skills and Responsibility**

**(i) Description of the interpersonal skills and capacity to carry responsibility to be developed.**

**(ii) Teaching strategies to be used to develop these skills and abilities**

**(iii) Methods of assessment of student's interpersonal skills and capacity to carry responsibility**

**d. Communication, Information Technology and Numerical Skills.**

**(i) Description of the skills to be developed in this domain.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's numerical and communication skills.**

**e. Psychomotor Skills (if applicable)**

**(i) Description of the psychomotor skills to be developed and level of performance required.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's psychomotor skills.**

## 5 - Schedule of Assessment Tasks for Students During the Semester

Assessment	Assessment task (eg. essay, test, group project, examination, etc)	Week due	Proportion of final Assessment

## D. Student Support

**1 - Arrangements for availability of faculty for individual student consultations and academic advice. (include amount of time faculty are available each week)**

## E. Learning Resources

### 1 - Required Text(s).

D'Souza and Alan Cameron Wills, "Objects, Components, and Frameworks with UML; the catalysis approach", Addison-Wesley, 1998  
ISBN-13 9780201310122 ISBN-10 0201310120

### 2 - Essential References

D'Souza and Alan Cameron Wills, "Objects, Components, and Frameworks with UML; the catalysis approach", Addison-Wesley, 1998  
ISBN-13 9780201310122 ISBN-10 0201310120

### 3 - Recommended Books and Reference Material (Journals, Reports, ets) (Attach List)

### 4 - Electronic Materials, Web Sites etc.

### 5 - Other Learning material such as computer-based programs/CD, professional standards/regulations

## F. Facilities Required

**Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)**

### 1. Accommodation (Lecture rooms, laboratories, etc.)

### 2. Computing resources

### 3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)

## **G . Course Evaluation and Improvement Processes**

<b>1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching</b>
<b>2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department</b>
<b>3 Processes for Improvement of Teaching</b>
<b>4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)</b>
<b>5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.</b>

# Course Specification

Institution	King Abdulaziz University
College / Department	Faculty of Computing and Information Technology / Information System

## A - Course Identification and General Information

<b>1 - Course Title and code:</b>
Internet Applications and Web Programming / CPIS-358
<b>2 - Credit hours:</b>
3
<b>3 - Program in which the course is offered:</b>
B.S.Information System
<b>4 - Name of Faculty member responsible for the course</b>
Dr. Saleh Muhammad Alshomrani
<b>5 - Level/year at which this course is offered</b>
Junior - 300
<b>6 - Co-requisites for this course (if any)</b>
<b>7 - Pre-requisites for this course (if any)</b>
CPIS-250
<b>8 - Location if not offered in main campus</b>
Boys - Sulimania , Girls - Sulimania , Girls - Faisalia , Boys - North Jeddah , Girls - North Jeddah

## B - Objectives

<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>
1 Introduction to Computers and the Internet
2 Web Browser Basics: Internet Explorer and Firefox
3 Dive Into Web 2.0
4 Search
5 User-Generated Content
6 Blogging
7 Social Networking
8 Software Development
9 XML, RSS, Atom, JSON and VoIP
10 Future of the Web
11 Introduction to XHTML
12 Cascading Style Sheets (CSS)
13 JavaScript: Introduction to Scripting
14 JavaScript: Control Statements I
15 JavaScript: Control Statements II
16 JavaScript: Functions

<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>	
17	JavaScript: Objects
18	Document Object Model (DOM): Objects and Collections
19	JavaScript: Events
20	XML and RS
<b>2 - Briefly describe any plans for developing and improving the course that are being implemented.</b>	

**C - Course Description** ( Note: General description in the form to be used for the Bulletin or Handbook should be attached)

<b>1 - Topics to be Covered:</b>
<p>This course aims to equip students with the necessary knowledge to design and implement intranet applications. It emphasizes on the specific technologies of these applications and how to employ them in building effective and efficient applications. It also aims to familiarize the students with technical characteristics of the Internet protocols. It covers also the various structures of Internet-based application development and the organization and security of business transactions conducted over intranets.</p>

<b>2 - Course components (total contact hours per semester):</b>			
Lecture:	Tutorial:	Practical/Fieldwork/Internship	Other
3	1	2	

<b>3 - Additional private study/learning hours expected for students per week. (This should be an average for the semester not a specific requirement in each week):</b>

<b>4 - Development of Learning Outcomes in Domains of Learning</b>
<p>For each of the domains of learning shown below indicate:</p> <ul style="list-style-type: none"> <li>- A brief summary of the knowledge or skill the course is intended to develop;</li> <li>- Adescription of the teaching strategies to be used in the curse to develop that knowledge or skill;</li> <li>- The methods of students assessment to be used in the course to evalute learning outcomes in the domain concerned.</li> </ul>

**a. Knowledge**

**(i) Description of the knowledge to be acquired**

**(ii) Teaching strategies to be used to develop that knowledge**

**Lectures**

Instructor will teach the topics of the course emphasizing on the course related learning objectives through three fifty minutes lecture meetings per week. Lectures will, in most cases, have a mix of formal lecturing and active learning.

**Labs**

During the tutorials (one 80 minutes meeting per week), the instructor will solve example problems related to the recently introduced topic. The instructor will also discuss with the students the problems they faced while trying to solve the assigned homework problems. Some of the tutorials are devoted for training the students on software packages and tools needed in the course.

**(iii) Methods of assessment of knowledge acquired**

1	Final Exam
2	Midterm Exam1
3	Midterm Exam2
4	Quiz
5	Lab Test
6	Project Report
7	Graded Exercises

**b. Cognitive Skills**

**(i) Cognitive skills to be developed**

**(ii) Teaching strategies to be used to develop these cognitive skills.**

**(iii) Methodes of assessment of student's cognitive skills.**

**c. Interpersonal Skills and Responsibility**

**(i) Description of the interpersonal skills and capacity to carry responsibility to be developed.**

**(ii) Teaching strategies to be used to develop these skills and abilities**

**(iii) Methods of assessment of student's interpersonal skills and capacity to carry responsibility**

**d. Communication, Information Technology and Numerical Skills.**

**(i) Description of the skills to be developed in this domain.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's numerical and communication skills.**

**e. Psychomotor Skills (if applicable)**

**(i) Description of the psychomotor skills to be developed and level of performance required.**

(ii) Methods of assessment to be used to develop the above skills.

#### 5 - Schedule of Assessment Tasks for Students During the Semester

Assessment	Assessment task (eg. essay, test, group project, examination, etc)	Week due	Proportion of final Assessment
1	Final Exam		30
2	Midterm Exam1		15
3	Midterm Exam2		15
4	Quiz		5
5	Lab Test		20
6	Project Report		10
7	Graded Exercises		5

#### D. Student Support

1 - Arrangements for availability of faculty for individual student consultations and academic advice. (include amount of time faculty are available each week)

#### E. Learning Resources

##### 1 - Required Text(s).

Deitel, "Internet and World Wide Web: How to Program", Pearson Education (Prentice Hall), 4th Edition, 2009  
ISBN-13 9780131752429 ISBN-10 0131752421

##### 2 - Essential References

Deitel, "Internet and World Wide Web: How to Program", Pearson Education (Prentice Hall), 4th Edition, 2009  
ISBN-13 9780131752429 ISBN-10 0131752421

##### 3 - Recommended Books and Reference Material (Journals, Reports, ets) (Attach List)

##### 4 - Electronic Materials, Web Sites etc.

##### 5 - Other Learning material such as computer-based programs/CD, professional standards/regulations

## **F. Facilities Required**

Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)

**1. Accommodation (Lecture rooms, laboratories, etc.)**

**2. Computing resources**

**3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)**

## **G . Course Evaluation and Improvement Processes**

**1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching**

**2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department**

**3 Processes for Improvement of Teaching**

**4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)**

**5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.**



# Course Specification

Institution	King Abdulaziz University
College / Department	Faculty of Computing and Information Technology / Information System

## A - Course Identification and General Information

<b>1 - Course Title and code:</b>	Fundamentals of Data Networks / CPIS-370
<b>2 - Credit hours:</b>	3
<b>3 - Program in which the course is offered:</b>	B.S.Information System
<b>4 - Name of Faculty member responsible for the course</b>	Dr. Ayman Ghazi Fayoumi
<b>5 - Level/year at which this course is offered</b>	Junior - 300
<b>6 - Co-requisites for this course (if any)</b>	
<b>7 - Pre-requisites for this course (if any)</b>	CPIS-222
<b>8 - Location if not offered in main campus</b>	Boys - Sulimania , Girls - Sulimania , Girls - Faisalia , Boys - North Jeddah , Girls - North Jeddah

## B - Objectives

<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>	
1	Understand key principles of data representation and manipulation in computing solutions.
2	Understand the principles underlying layered systems architectures and their application to both computers and networks.
3	Understand the differences and similarities between the core elements of an IT
4	infrastructure solution, such as clients, servers, network devices, wired and wireless network links, systems software, and specialized security devices.
5	Understand how IT infrastructure components are organized into infrastructure solutions in different organizational environments.
6	Understand the principles underlying service virtualization.
7	Understand through practical examples how protocols are used to enable communication between computing devices connected to each other.
8	Configure an IT infrastructure solution for a small organization, including a network based on standard technology components, servers, security devices, and several different types of computing clients.
9	Apply the core concepts underlying IP networks to solve simple network design problems, including IP subnetting.
10	Understand the role and structure of the Internet as an IT infrastructure component and design simple infrastructure solutions based on the use of the Internet.
11	Understand the components and structure of a large-scale organizational IT infrastructure solution at a level that allows them to use it effectively.

<b>1 - Summary of the main learning outcomes for students enrolled in the course</b>	
12	Understand the role of IT control and service management frameworks in managing a large-scale organizational IT infrastructure solution.
13	Negotiate with vendors providing design and implementation solutions.
14	Understand the opportunities that virtual computing service provision models, such as cloud computing, create for organizations.
15	Analyze and understand the security and business continuity implications of IT infrastructure design solutions.
16	Configure simple infrastructure security solutions.
17	Minimize the environmental and resource consumption impacts of IT infrastructure decisions
<b>2 - Briefly describe any plans for developing and improving the course that are being implemented.</b>	

**C - Course Description** ( Note: General description in the form to be used for the Bulletin or Handbook should be attached)

<b>1 - Topics to be Covered:</b>
<p>This course provides an introduction to IT infrastructure issues for students majoring in Information Systems. It covers topics related to both computer and systems architecture and communication networks, with an overall focus on the services and capabilities that IT infrastructure solutions enable in an organizational context. It gives the students the knowledge and skills that they need for communicating effectively with professionals whose special focus is on hardware and systems software technology and for designing organizational processes and software solutions that require in-depth understanding of the IT infrastructure capabilities and limitations. It also prepares the students for organizational roles that require interaction with external vendors of IT infrastructure components and solutions. The course focuses strongly on Internet-based solutions, computer and network security, business continuity, and the role of infrastructure in regulatory compliance.</p>

<b>2 - Course components (total contact hours per semester):</b>			
Lecture:	Tutorial:	Practical/Fieldwork/Internship	Other
3	1	1	

<b>3 - Additional private study/learning hours expected for students per week. (This should be an average for the semester not a specific requirement in each week):</b>

<b>4 - Development of Learning Outcomes in Domains of Learning</b>
<p>For each of the domains of learning shown below indicate:</p> <ul style="list-style-type: none"> <li>- A brief summary of the knowledge or skill the course is intended to develop;</li> <li>- A description of the teaching strategies to be used in the course to develop that knowledge or skill;</li> <li>- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.</li> </ul>
<b>a. Knowledge</b>
<p><b>(i) Description of the knowledge to be acquired</b></p> <p>DATA COMMUNICATIONS  LAYERED TASKS  Analog and Digital Data  Attenuation  Line Coding  Aspects of Digital-to-Analog Conversion  GUIDED MEDIA  CIRCUIT-SWITCHED NETWORKS  Data Link Layer  FLOW AND ERROR CONTROL</p>

#### 4 - Development of Learning Outcomes in Domains of Learning

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.

##### a. Knowledge

Wired LANs: Ethernet

IPv4 ADDRESSES

Wireless WANs: Cellular Telephone and Satellite Networks

Review and Exercises

##### (ii) Teaching strategies to be used to develop that knowledge

###### Lectures

Instructor will teach the topics of the course emphasizing on the course related learning objectives through three fifty minutes lecture meetings per week. Lectures will, in most cases, have a mix of formal lecturing and active learning.

###### Labs

During the tutorials (one 80 minutes meeting per week), the instructor will solve example problems related to the recently introduced topic. The instructor will also discuss with the students the problems they faced while trying to solve the assigned homework problems. Some of the tutorials are devoted for training the students on software packages and tools needed in the course. Tools are Routers, Switches and other network devices available in the lab.

###### Projects

A number of projects are assigned throughout the semester. The projects involve topics that require the use of provided network devices available in the labs and simulators like GNS3, Packet Tracer and OPNET IT Guru, simulation experiments, and the implementation of theoretically studied issues. Students are grouped in teams, each of 4 students. Each team should submit report and give a presentation of their work.

##### (iii) Methods of assessment of knowledge acquired

1	Final Exam
2	Midterm Exam
3	Midterm Exam
4	Quiz
5	Lab Test
6	Project Report
7	Graded Exercises

##### b. Cognitive Skills

##### (i) Cognitive skills to be developed

##### (ii) Teaching strategies to be used to develop these cognitive skills.

##### (iii) Methodes of assessment of student's cognitive skills.

**c. Interpersonal Skills and Responsibility**

**(i) Description of the interpersonal skills and capacity to carry responsibility to be developed.**

**(ii) Teaching strategies to be used to develop these skills and abilities**

**(iii) Methods of assessment of student's interpersonal skills and capacity to carry responsibility**

**d. Communication, Information Technology and Numerical Skills.**

**(i) Description of the skills to be developed in this domain.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's numerical and communication skills.**

**e. Psychomotor Skills (if applicable)**

**(i) Description of the psychomotor skills to be developed and level of performance required.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's psychomotor skills.**

## 5 - Schedule of Assessment Tasks for Students During the Semester

Assessment	Assessment task (eg. essay, test, group project, examination, etc)	Week due	Proportion of final Assessment
1	Final Exam		30
2	Midterm Exam		15
3	Midterm Exam		15
4	Quiz		5
5	Lab Test		20
6	Project Report		10
7	Graded Exercises		5

### D. Student Support

**1 - Arrangements for availability of faculty for individual student consultations and academic advice. (include amount of time faculty are available each week)**

### E. Learning Resources

<b>1 - Required Text(s).</b> Forouzan, "Data Communications and Networking", McGraw-Hill, 4th Edition, 2006 ISBN-13 9780073250328 ISBN-10 0073250325
<b>2 - Essential References</b> Forouzan, "Data Communications and Networking", McGraw-Hill, 4th Edition, 2006 ISBN-13 9780073250328 ISBN-10 0073250325
<b>3 - Recommended Books and Reference Material (Journals, Reports, ets) (Attach List)</b>
<b>4 - Electronic Materials, Web Sites etc.</b>
<b>5 - Other Learning material such as computer-based programs/CD, professional standards/regulations</b>

### F. Facilities Required

<b>Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)</b>
<b>1. Accommodation (Lecture rooms, laboratories, etc.)</b>
<b>2. Computing resources</b>
<b>3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)</b>

## **G . Course Evaluation and Improvement Processes**

<b>1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching</b>
<b>2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department</b>
<b>3 Processes for Improvement of Teaching</b>
<b>4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)</b>
<b>5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.</b>

# Course Specification

Institution	King Abdulaziz University
College / Department	Faculty of Computing and Information Technology / Information System

## A - Course Identification and General Information

<b>1 - Course Title and code:</b>	Development of E-Systems and Interface Design / CPIS-382
<b>2 - Credit hours:</b>	3
<b>3 - Program in which the course is offered:</b>	B.S.Information System
<b>4 - Name of Faculty member responsible for the course</b>	Mr. Mostafa Alsayed Saleh
<b>5 - Level/year at which this course is offered</b>	Junior - 300
<b>6 - Co-requisites for this course (if any)</b>	
<b>7 - Pre-requisites for this course (if any)</b>	CPIS-354 CPIS-350 CPIS-351
<b>8 - Location if not offered in main campus</b>	Boys - Sulimania , Girls - Sulimania , Girls - Faisalia , Boys - North Jeddah , Girls - North Jeddah

## B - Objectives

<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>	
1	identify the key Problem of Today's Web, and explain the Semantic Web impact, and define the different layers in the Semantic Web cake
2	compare and contrast between HTML and XML
3	distinguish between XML and Relational Database model, and convert between them
4	build queries for XML documents using XPath
5	define XML related concepts such: well formed , validated files, namespaces, and define and describe some of XML based languages
6	define XML Schema related concepts such: element, attribute, simple type, complex type
7	apply the XML well formed and validation rules
8	define RDF /Schema as a domain modeling language and define RDF/Schema related concepts

<b>1 - Summary of the main learning outcomes for students enrolled in the course</b>	
9	compare and contrast between XML and RDF, and give examples
10	describe and give examples for the RDF triple model (resource-property-value)
11	compare and contrast between RDF/Schema and OWL , and give examples
12	describe and give examples for some OWL concepts, and demonstrate the familiarity with some OWL based ontology examples
13	explain the backward compatibility between the Semantic Web layers
14	build OWL Ontologies with Protégé, and build SPRQL queries using Protégé
15	define advanced web concepts such as Web Services and Software Agents
16	demonstrate work harmoniously and effectively in a team to model an knowledge domain based on ontology
17	write high quality design reports
18	plan, prepare and deliver clear and correct oral presentations
<b>2 - Briefly describe any plans for developing and improving the course that are being implemented.</b>	

**C - Course Description** ( Note: General description in the form to be used for the Bulletin or Handbook should be attached)

<b>1 - Topics to be Covered:</b>
The Semantic Web is a W3C Activity for representing information in the World Wide Web in a machine-readable format. So, it can be used by machines not just for display purposes, but for automation, integration, and reuse across applications. This course introduces techniques that are useful stand-alone and can be integrated for building a semantic web. Students will learn: what is the Semantic, Semantic Web technologies; Data modeling languages such as XML XMLSCHEMA, Domain modeling languages such as RDF , RDFSchema, Ontology modeling languages such as OWL, Query languages such as XQuery and SPRQL. Also students will use tools such as Stylus studio, and Protégé in their modeling.

<b>2 - Course components (total contact hours per semester):</b>			
Lecture:	Tutorial:	Practical/Fieldwork/Internship	Other
3	2	1	

<b>3 - Additional private study/learning hours expected for students per week. (This should be an average for the semester not a specific requirement in each week):</b>

<b>4 - Development of Learning Outcomes in Domains of Learning</b>
For each of the domains of learning shown below indicate:
- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.
<b>a. Knowledge</b>
<b>(i) Description of the knowledge to be acquired</b>
Review for prerequisite topics
Introduction to Semantic Web
XML



#### 4 - Development of Learning Outcomes in Domains of Learning

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.

##### a. Knowledge

XML Schema  
XML based languages  
Ontology concepts  
RDF  
RDF Schema  
SPRQL  
OWL ontology modeling  
OWL applications  
Web Services & Software Agents  
Course Project Presentation  
Review  
Finals

##### (ii) Teaching strategies to be used to develop that knowledge

###### Lectures

Instructor will teach the topics of the course emphasizing on the course related learning objectives through two eighty minutes lecture meetings per week. Lectures will; in most cases, have a mix of formal lecturing and active learning.

###### Tutorials

During the tutorials (one 80 minutes meeting per week), the instructor will solve example problems related to the recently introduced topic. The instructor will also discuss with the students the problems they faced while trying to solve the assigned homework problems. Some of the tutorials are devoted for training the students on software packages needed in the course.

###### Project

A project is assigned throughout the semester. The project involves topics that require data and information collection, implementation of theory through the development of OWL codes. Students are grouped in teams, each of 2 students. Each team should submit report and give a presentation of their work.

##### (iii) Methods of assessment of knowledge acquired

1	Final Exam
2	Midterm Exam 1
3	Midterm Exam 2
4	Lab Activities
5	Project

##### b. Cognitive Skills

##### (i) Cognitive skills to be developed

##### (ii) Teaching strategies to be used to develop these cognitive skills.

##### (iii) Methodes of assessment of student's cognitive skills.

**c. Interpersonal Skills and Responsibility**

**(i) Description of the interpersonal skills and capacity to carry responsibility to be developed.**

**(ii) Teaching strategies to be used to develop these skills and abilities**

**(iii) Methods of assessment of student's interpersonal skills and capacity to carry responsibility**

**d. Communication, Information Technology and Numerical Skills.**

**(i) Description of the skills to be developed in this domain.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's numerical and communication skills.**

**e. Psychomotor Skills (if applicable)**

**(i) Description of the psychomotor skills to be developed and level of performance required.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's psychomotor skills.**

## 5 - Schedule of Assessment Tasks for Students During the Semester

Assessment	Assessment task (eg. essay, test, group project, examination, etc)	Week due	Proportion of final Assessment
1	Final Exam		40
2	Midterm Exam 1		15
3	Midterm Exam 2		15
4	Lab Activities		15
5	Project		15

## D. Student Support

1 - Arrangements for availability of faculty for individual student consultations and academic advice. (include amount of time faculty are available each week)

## E. Learning Resources

<b>1 - Required Text(s).</b> Leuf, "The Semantic Web: Crafting Infrastructure for Agency", Wiley, 2006 ISBN-13 9780470015223 ISBN-10 0470015225
<b>2 - Essential References</b> Leuf, "The Semantic Web: Crafting Infrastructure for Agency", Wiley, 2006 ISBN-13 9780470015223 ISBN-10 0470015225
<b>3 - Recommended Books and Reference Material (Journals, Reports, ets) (Attach List)</b>
<b>4 - Electronic Materials, Web Sites etc.</b>
<b>5 - Other Learning material such as computer-based programs/CD, professional standards/regulations</b>

## F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)
<b>1. Accommodation (Lecture rooms, laboratories, etc.)</b>
<b>2. Computing resources</b>
<b>3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)</b>

## **G . Course Evaluation and Improvement Processes**

<b>1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching</b>
<b>2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department</b>
<b>3 Processes for Improvement of Teaching</b>
<b>4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)</b>
<b>5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.</b>

# Course Specification

Institution	King Abdulaziz University
College / Department	Faculty of Computing and Information Technology / Information System

## A - Course Identification and General Information

<b>1 - Course Title and code:</b>	Modeling and Simulations / CPIS-424
<b>2 - Credit hours:</b>	3
<b>3 - Program in which the course is offered:</b>	B.S.Information System
<b>4 - Name of Faculty member responsible for the course</b>	Dr. Muazzam Siddque
<b>5 - Level/year at which this course is offered</b>	Senior - 400
<b>6 - Co-requisites for this course (if any)</b>	
<b>7 - Pre-requisites for this course (if any)</b>	CPIS-250
<b>8 - Location if not offered in main campus</b>	Boys - Sulimania , Girls - Sulimania , Girls - Faisalia , Boys - North Jeddah , Girls - North Jeddah

## B - Objectives

<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>
1 Define the basic concepts in modeling & simulation
2 Define application areas for modeling & simulation
3 Differentiate between different types of simulation systems
4 Analyze the simulation of a system as it progresses over time
5 Determine the performance measures of a simulation system
6 Compute the performance measures of a simulation system
7 Describe various modules in Arena
8 Define entities and resources in a simulation model
9 Use Create module in Arena to define input to a simulation model
10 Use Process module in Arena to define processing in a simulation model
11 Use Decide module in Arena to define conditions in a simulation model
12 Use Record module in Arena to gather statistics from the simulation model
13 Use Dispose module in Arena to define entities leaving a simulation model
14 Identify simulation parameters in Arena
15 Create animations and plots in Arena
16 Create schedules for resource usage in Arena

<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>	
17	Interpret the output statistics generated by Arena
18	Create a simulation model using Arena
19	Explain model validation, verification, accreditation and credibility
20	Identify the level of model detail
21	Apply techniques to verify a simulation model
22	Apply techniques to validate a simulation model
23	Apply techniques to establish a simulation model's credibility
24	Explain the role of management in building a simulation model
25	Identify different continuous and discrete probability distributions
26	Describe the parameters for various continuous and discrete probability distributions
27	Differentiate between approaches to specify a probability distribution for input data to a simulation model
28	Use a trace driven approach to specify an input probability distribution
29	Use empirical distribution functions to specify an input probability distribution
30	Use correlation and scatter plots to assess sample independence
31	Use summary statistics to hypothesize families of input probability distribution
32	Use histograms, quantile summary and box plots to hypothesize families of input probability distribution
33	Estimate parameters of an input probability distribution using Maximum Likelihood Method
34	Use heuristic procedures to determine how representative a fitted distribution is
35	Use goodness of fit tests to determine how representative a fitted distribution is
36	Use heuristic procedures to select input probability distribution in the absence of data
37	Describe the transient and steady state behavior of a stochastic process
38	Describe the types of simulation with regard to output analysis
39	Perform statistical analysis for terminating simulations
40	Perform statistical analysis for steady state parameters
<b>2 - Briefly describe any plans for developing and improving the course that are being implemented.</b>	

**C - Course Description** ( Note: General description in the form to be used for the Bulletin or Handbook should be attached)

<b>1 - Topics to be Covered:</b>
<p>This course is intended to develop the student's ability to understand the basic concepts in modeling and simulation and develop discrete event simulation models. It is an introductory level course offered to the Decision Support Systems track students in the Information System department. Topics include basic simulation modeling, simulation input and output analysis, validation and verification of simulation models and building simulation models using Arena and MS Excel.</p>

<b>2 - Course components (total contact hours per semester):</b>			
Lecture:	Tutorial:	Practical/Fieldwork/Internship	Other
3	1	2	

<b>3 - Additional private study/learning hours expected for students per week. (This should be an average for the semester not a specific requirement in each week):</b>

<b>4 - Development of Learning Outcomes in Domains of Learning</b>
<p>For each of the domains of learning shown below indicate:</p> <ul style="list-style-type: none"> <li>- A brief summary of the knowledge or skill the course is intended to develop;</li> <li>- A description of the teaching strategies to be used in the course to develop that knowledge or skill;</li> <li>- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.</li> </ul>

<b>a. Knowledge</b>
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**4 - Development of Learning Outcomes in Domains of Learning**

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.

**a. Knowledge****(i) Description of the knowledge to be acquired**

Basic simulation modeling

Simulation modeling using MS Excel and Arena

Validation and verification of simulation models

Simulation input analysis

Simulation output analysis

**(ii) Teaching strategies to be used to develop that knowledge****(iii) Methods of assessment of knowledge acquired**

1	Final Exam
2	Midterm Exam
3	Quiz 1
4	Quiz 2
5	Quiz 3
6	Quiz 4
7	Quiz 5
8	Project Report
9	Presentation
10	Graded Exercises
11	Lab Test

**b. Cognitive Skills****(i) Cognitive skills to be developed****(ii) Teaching strategies to be used to develop these cognitive skills.****(iii) Methodes of assessment of student's cognitive skills.**

**c. Interpersonal Skills and Responsibility**

**(i) Description of the interpersonal skills and capacity to carry responsibility to be developed.**

**(ii) Teaching strategies to be used to develop these skills and abilities**

**(iii) Methods of assessment of student's interpersonal skills and capacity to carry responsibility**

**d. Communication, Information Technology and Numerical Skills.**

**(i) Description of the skills to be developed in this domain.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's numerical and communication skills.**

**e. Psychomotor Skills (if applicable)**

**(i) Description of the psychomotor skills to be developed and level of performance required.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's psychomotor skills.**



## 5 - Schedule of Assessment Tasks for Students During the Semester

Assessment	Assessment task (eg. essay, test, group project, examination, etc)	Week due	Proportion of final Assessment
1	Final Exam		20
2	Midterm Exam		20
3	Quiz 1		1
4	Quiz 2		1
5	Quiz 3		1
6	Quiz 4		1
7	Quiz 5		1
8	Project Report		15
9	Presentation		5
10	Graded Exercises		15
11	Lab Test		20

### D. Student Support

1 - Arrangements for availability of faculty for individual student consultations and academic advice. (include amount of time faculty are available each week)

### E. Learning Resources

<b>1 - Required Text(s).</b> Law A. M., "Simulation Modeling and Analysis", McGraw-Hill Science/Engineering/Math; 4 Edition (July 21, 2006) ISBN-13 9780073294414 ISBN-10 0073294411
<b>2 - Essential References</b> Law A. M., "Simulation Modeling and Analysis", McGraw-Hill Science/Engineering/Math; 4 Edition (July 21, 2006) ISBN-13 9780073294414 ISBN-10 0073294411
<b>3 - Recommended Books and Reference Material (Journals, Reports, ets) (Attach List)</b>
<b>4 - Electronic Materials, Web Sites etc.</b>
<b>5 - Other Learning material such as computer-based programs/CD, professional standards/regulations</b>

### F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)
1. Accommodation (Lecture rooms, laboratories, etc.)
2. Computing resources
3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)

## **G . Course Evaluation and Improvement Processes**

<b>1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching</b>
<b>2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department</b>
<b>3 Processes for Improvement of Teaching</b>
<b>4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)</b>
<b>5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.</b>

# Course Specification

Institution	King Abdulaziz University
College / Department	Faculty of Computing and Information Technology / Information System

## A - Course Identification and General Information

<b>1 - Course Title and code:</b>	Professional Computing Issues / CPIS-428
<b>2 - Credit hours:</b>	2
<b>3 - Program in which the course is offered:</b>	B.S.Information System
<b>4 - Name of Faculty member responsible for the course</b>	Prof. Abdulhamid Muhammad Ragab
<b>5 - Level/year at which this course is offered</b>	Senior - 400
<b>6 - Co-requisites for this course (if any)</b>	
<b>7 - Pre-requisites for this course (if any)</b>	CPIS-323
<b>8 - Location if not offered in main campus</b>	Boys - Sulimania , Girls - Sulimania , Girls - Faisalia , Boys - North Jeddah , Girls - North Jeddah

## B - Objectives

<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>	
1	Will be able to comprehend basic issues in engineering and computer ethics
2	Will be able to analyze the impacts of information and communication technologies
3	Will be able to look at the connection between ethics and technology, the ethical issues emerged in the information society
4	Will be able to gain an understanding about the ethical principles, professional responsibilities and codes of conduct via surveying the engineer's obligations to society, employer and client.
5	Acquire a broad perspective on the social and ethical impacts and implications of information technology.
6	Understand various ethical issues surrounding computers.
7	Acquire specific knowledge about major issues in several different areas of the field of computer ethics.
8	Understand information privacy, Intellectual property, and security.
9	Acquire in-depth knowledge of at least one significant ethical issue generated by information technology.

**2 - Briefly describe any plans for developing and improving the course that are being implemented.**

**C - Course Description** ( Note: General description in the form to be used for the Bulletin or Handbook should be attached)

**1 - Topics to be Covered:**

The course provides an introduction to the ethical and social issues sparked by the ever-growing information society at the local and global level. This course will familiarize students with the impact of digitized information on individuals and societies. It focuses on privacy, intellectual property, computer crimes, evaluating and controlling technology, and professional ethics and responsibilities. The course also explores the social impact of information technology in different areas of human life such as Internet; Information flooding, and the computerized world: Business; Medicine; Law; Government; Transportation; Entertainment; Education; Banking; e-Commerce; Communications. An Overview of the Law: Ownership of Software; Software Contracts and Liability; Privacy and the Data Protection Act; Computer Misuse, and forensic, Societies for Computing Professionals, and Professionalism and Ethics.

**2 - Course components (total contact hours per semester):**

Lecture:	Tutorial:	Practical/Fieldwork/Internship	Other
2	0	0	

**3 - Additional private study/learning hours expected for students per week. (This should be an average for the semester not a specific requirement in each week):**

**4 - Development of Learning Outcomes in Domains of Learning**

- For each of the domains of learning shown below indicate:
- A brief summary of the knowledge or skill the course is intended to develop;
  - A description of the teaching strategies to be used in the course to develop that knowledge or skill;
  - The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.

**a. Knowledge**

**(i) Description of the knowledge to be acquired**

ethics and law  
privacy and data protection  
nature of software  
intellectual property rights  
computer crime  
internet impact  
software contracts and liability  
professional ethics and responsibilities  
acm code of ethics  
ieee code of ethics  
project seminar

**(ii) Teaching strategies to be used to develop that knowledge**

**Lectures**

- o Instructor will teach the topics of the course emphasizing on related course learning outcomes (CLOs).
- o Measuring SLO using homework assignments, midterm exam, case study projects, quizzes, and final exam.
- o Informing students by their exam answers.
- o Presenting student seminars for each two groups of students.

**Homework**

- o Assigning homework problems at end of each chapter.
- o Discussing ideal solutions with students.

**Attendance**

Absence should not exceed 25% limit.

**4 - Development of Learning Outcomes in Domains of Learning**

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.

**a. Knowledge****(iii) Methods of assessment of knowledge acquired**

1	Final Exam
2	Midterm Exam I
3	Quiz I
4	Assignments and Projects

**b. Cognitive Skills****(i) Cognitive skills to be developed****(ii) Teaching strategies to be used to develop these cognitive skills.****(iii) Methods of assessment of student's cognitive skills.****c. Interpersonal Skills and Responsibility****(i) Description of the interpersonal skills and capacity to carry responsibility to be developed.****(ii) Teaching strategies to be used to develop these skills and abilities****(iii) Methods of assessment of student's interpersonal skills and capacity to carry responsibility**

**d. Communication, Information Technology and Numerical Skills.**

**(i) Description of the skills to be developed in this domain.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's numerical and communication skills.**

**e. Psychomotor Skills (if applicable)**

**(i) Description of the psychomotor skills to be developed and level of performance required.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's psychomotor skills.**

**5 - Schedule of Assessment Tasks for Students During the Semester**

Assessment	Assessment task (eg. essay, test, group project, examination, etc)	Week due	Proportion of final Assessment
1	Final Exam		40
2	Midterm Exam1		20
3	Quiz1		20
4	Assignments and Projects		20

**D. Student Support**

**1 - Arrangements for availability of faculty for individual student consultations and academic advice. (include amount of timen faculty are available each week)**

## E. Learning Resources

<b>1 - Required Text(s).</b> Bynum and Simon Rogerson, "Computer Ethics and Professional Responsibility", Wiley , 2004 ISBN-13 9781855548442 ISBN-10 1855548445
<b>2 - Essential References</b> Bynum and Simon Rogerson, "Computer Ethics and Professional Responsibility", Wiley , 2004 ISBN-13 9781855548442 ISBN-10 1855548445
<b>3 - Recommended Books and Reference Material (Journals, Reports, ets) (Attach List)</b>
<b>4 - Electronic Materials, Web Sites etc.</b>
<b>5 - Other Learning material such as computer-based programs/CD, professional standards/regulations</b>

## F. Facilities Required

<b>Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)</b>
<b>1. Accommodation (Lecture rooms, laboratories, etc.)</b>
<b>2. Computing resources</b>
<b>3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)</b>

## G . Course Evaluation and Improvement Processes

<b>1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching</b>
<b>2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department</b>
<b>3 Processes for Improvement of Teaching</b>
<b>4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)</b>
<b>5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.</b>

# Course Specification

Institution	King Abdulaziz University
College / Department	Faculty of Computing and Information Technology / Information System

## A - Course Identification and General Information

<b>1 - Course Title and code:</b>	E-Systems Applications / CPIS-483
<b>2 - Credit hours:</b>	3
<b>3 - Program in which the course is offered:</b>	B.S.Information System
<b>4 - Name of Faculty member responsible for the course</b>	Dr. Muhammad Ahtisham Aslam
<b>5 - Level/year at which this course is offered</b>	Senior - 400
<b>6 - Co-requisites for this course (if any)</b>	
<b>7 - Pre-requisites for this course (if any)</b>	CPIS-482
<b>8 - Location if not offered in main campus</b>	Boys - Sulimania , Girls - Sulimania , Girls - Faisalia , Boys - North Jeddah , Girls - North Jeddah

## B - Objectives

<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>
1 Identify specifications and requirements of e-systems
2 State major models of e-business
3 Convert traditional business models to e-systems
4 Analyse and identify support services
5 Apply social networking in e-business
6 Convert traditional government system to e-government
7 Implement social network for e-systems
8 State e-learning and its types
9 Implementing learning management systems for e-learning
10 Apply Blogs and wikis in businesses
11 Decision making to adopt e-systems for business organizations
12 Make the technology choice
13 Implement e-systems in different technologies
14 State major ethical and legal issues in e-business
15 Solve managerial issues in businesses
16 State application areas of mobile computing



<b>1 - Summary of the main learning outcomes for students enrolled in the course</b>	
17	Define fundamentals of dynamic pricing and e-auctions
18	Convert traditional selling system to e-auctions
19	Trace and identify e-auction frauds and its preventions
20	Solve customer services issues by using E-CRM
<b>2 - Briefly describe any plans for developing and improving the course that are being implemented.</b>	

**C - Course Description** ( Note: General description in the form to be used for the Bulletin or Handbook should be attached)

<b>1 - Topics to be Covered:</b>
<p>This course is advance course in the sequence of 3 courses in the domain of E-Commerce and E-Systems. Learning about different upcoming business areas and using information technology in these areas is the key focus of this course. This course includes topics: E-Commerce, E-Business, Web 2.0, Social Networking, E-Government, Mobile Computing, E-Learning, E-Auctions, E-CRM from business perspective and topics like Rating, Reviews, AJAX, CAPTCHA verifications, Wish Lists from technology perspectives.</p>

<b>2 - Course components (total contact hours per semester):</b>			
Lecture:	Tutorial:	Practical/Fieldwork/Internship	Other
3	1	1	

<b>3 - Additional private study/learning hours expected for students per week. (This should be an average for the semester not a specific requirement in each week):</b>

<b>4 - Development of Learning Outcomes in Domains of Learning</b>
For each of the domains of learning shown below indicate:
<ul style="list-style-type: none"> <li>- A brief summary of the knowledge or skill the course is intended to develop;</li> <li>- A description of the teaching strategies to be used in the course to develop that knowledge or skill;</li> <li>- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.</li> </ul>

<b>a. Knowledge</b>	
<b>(i) Description of the knowledge to be acquired</b>	
<p>E-Commerce &amp; E-Business  Web 2.0 and Social Networks  E-Government  E-Learning  Mobile Computing  E-Auctions  E-CRM  E-Commerce and Application Repositories  Economics and Justification of Electronic Commerce  Web Services  E-Commerce Frauds and Security  Launching Successful E-Commerce Projects</p>	
<b>(ii) Teaching strategies to be used to develop that knowledge</b>	
<b>(iii) Methods of assessment of knowledge acquired</b>	
1	Final Exam
2	Midterm Exam
3	Test I

**4 - Development of Learning Outcomes in Domains of Learning**

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.

**a. Knowledge****(iii) Methods of assessment of knowledge acquired**

4	Test2
5	Test3
6	Quiz1
7	Quiz2
8	Quiz3
9	Project Report

**b. Cognitive Skills****(i) Cognitive skills to be developed****(ii) Teaching strategies to be used to develop these cognitive skills.****(iii) Methodes of assessment of student's cognitive skills.****c. Interpersonal Skills and Responsibility****(i) Description of the interpersonal skills and capacity to carry responsibility to be developed.****(ii) Teaching strategies to be used to develop these skills and abilities****(iii) Methods of assessment of student's interpersonal skills and capacity to carry responsibility**

**d. Communication, Information Technology and Numerical Skills.**

**(i) Description of the skills to be developed in this domain.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's numerical and communication skills.**

**e. Psychomotor Skills (if applicable)**

**(i) Description of the psychomotor skills to be developed and level of performance required.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's psychomotor skills.**

**5 - Schedule of Assessment Tasks for Students During the Semester**

Assessment	Assessment task (eg. essay, test, group project, examination, etc)	Week due	Proportion of final Assessment
1	Final Exam		35
2	Midterm Exam		20
3	Test1		5
4	Test2		5
5	Test3		5
6	Quiz1		5
7	Quiz2		5
8	Quiz3		5
9	Project Report		15

## D. Student Support

**1 - Arrangements for availability of faculty for individual student consultations and academic advice. (include amount of time faculty are available each week)**

## E. Learning Resources

### 1 - Required Text(s).

Rajput, "E-Commerce Systems Architecture and Applications", Artech House Publishers, 2000  
ISBN-13 9781580530859 ISBN-10 1580530850

### 2 - Essential References

Rajput, "E-Commerce Systems Architecture and Applications", Artech House Publishers, 2000  
ISBN-13 9781580530859 ISBN-10 1580530850

### 3 - Recommended Books and Reference Material (Journals, Reports, ets) (Attach List)

### 4 - Electronic Materials, Web Sites etc.

### 5 - Other Learning material such as computer-based programs/CD, professional standards/regulations

## F. Facilities Required

**Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)**

### 1. Accommodation (Lecture rooms, laboratories, etc.)

### 2. Computing resources

### 3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)

## G . Course Evaluation and Improvement Processes

### 1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching

### 2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department

### 3 Processes for Improvement of Teaching

**4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)**

### 5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.

# Course Specification

Institution	King Abdulaziz University
College / Department	Faculty of Computing and Information Technology / Information System

## A - Course Identification and General Information

<b>1 - Course Title and code:</b>
E-Business Strategies / CPIS-486
<b>2 - Credit hours:</b>
3
<b>3 - Program in which the course is offered:</b>
B.S.Information System
<b>4 - Name of Faculty member responsible for the course</b>
Dr. Sayed Hamid Hassan
<b>5 - Level/year at which this course is offered</b>
Senior - 400
<b>6 - Co-requisites for this course (if any)</b>
<b>7 - Pre-requisites for this course (if any)</b>
BUS-232 CPIS-483
<b>8 - Location if not offered in main campus</b>
Boys - Sulimania , Girls - Sulimania , Girls - Faisalia , Boys - North Jeddah , Girls - North Jeddah

## B - Objectives

<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>
1 Define the new economy, framework of e-business
2 Compare between an organization and a virtual organization.
3 Describe characteristics of virtual organizations.
4 Techniques to manage a virtual organization and its success factors.
5 Describe e-business models for virtual organizations, Models of efficient response, virtual alliance framework, changes in virtual organizations.
6 Define planning strategies for emerging business models.
7 Describe background to planning theory.
8 Developing planning strategies for networked organization.
9 Illustrate Coopetition and proposed new SIS planning model.

<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>	
10	Describe Internetworked markets, strategies for i-markets.
11	Enumerate the chain gang, supply chain management, value chains.
12	Define the basic concept of value system.
13	Implementation the value chain analysis.
14	Describe demand chains, virtual value chains, strategies for value networks.
15	Describe market mediation, strategies and management of i-business.
16	Developing infrastructures for global e-business, strategic framework for managing a global SME business.
17	Illustrate case studies for virtual infrastructure management.
18	Developing a strategic plan and consultant engagement process.
19	Developing knowledge based strategies for a virtual organization.
20	Describe knowledge management, knowledge as an asset.
21	Define knowledge classification developing strategies for managing knowledge.
22	Examine Coevolutionary strategies, opportunities and threats in e-business, return on investment and risk analysis.
23	Development of the balance scorecard and value measurement.
24	Identifying the economics of e-business.
25	Define Outsourcing, partnering and the virtual organization.
26	Studying the Price WaterhousCoopers e-business staged model.
27	Describe outsourcing and its types.
28	Comparing outsourcing and core competencies and linking outsourcing to strategy.
29	Relate e-business with ERP, B2B fulfillment and operations.
30	Examine cosset the customer – web based call centers.
<b>2 - Briefly describe any plans for developing and improving the course that are being implemented.</b>	

**C - Course Description** ( Note: General description in the form to be used for the Bulletin or Handbook should be attached)

**1 - Topics to be Covered:**

CPIS 486 is an elective course from the E-Systems courses offered by the IS department. The course is intended to introduce E-Business strategies for Information systems and infra structure required for web-based business models. Topics included are E-Business and Virtual Organizations, Characteristics of Virtual Organizations, E-Business models, Globalization on SME-E-business, Strategy Evaluation to change E-Business, Virtual Infrastructure Culture to Contact external bodies and participate in e-business, Developing Strategies for Virtual Organizations, IS Plans and Strategies of e-business, Converting to e-business strategies of e-markets.

**2 - Course components (total contact hours per semester):**

Lecture:	Tutorial:	Practical/Fieldwork/Internship	Other
3	0	1	

**3 - Additional private study/learning hours expected for students per week. (This should be an average for the semester not a specific requirement in each week):**

**4 - Development of Learning Outcomes in Domains of Learning**

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.

**a. Knowledge**

**(i) Description of the knowledge to be acquired**

e-business and the virtual organization  
 Characteristics of the virtual organization  
 e-business models for virtual organizations  
 IS planning strategies for emerging business models  
 Moving from e-business to i-business strategies in virtual markets  
 Globalization and e-strategies for SME's  
 Developing knowledge-based strategies for a virtual organization  
 Evaluating strategies for e-business change  
 Outsourcing, partnering and the virtual organization

**(ii) Teaching strategies to be used to develop that knowledge**

**Lectures**

Students shall be taught topics with emphasis on learning outcomes. All lecture slides are provided and students are encouraged to read the text book. Attainment of outcomes is quantified through tests, lab work, graded exercises, mid and final exams.

**Labs**

In the laboratories students are expected to implement the various ideas and concepts in a simple project and learn to work in a team and get leadership and management skills

**Class Participation**

Class participation and attendance is monitored and rewarded in the final grades

**Presentation**

To effectively enhance the communication skills the students are rewarded for this again in their final grades

**4 - Development of Learning Outcomes in Domains of Learning**

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.

**a. Knowledge****(iii) Methods of assessment of knowledge acquired**

1	Final Exam
2	Midterm Exam 1
3	Midterm Exam 2
4	Test 1
5	Test 2
6	Discussion
7	Graded Exercises 1
8	Graded Exercises 2

**b. Cognitive Skills****(i) Cognitive skills to be developed****(ii) Teaching strategies to be used to develop these cognitive skills.****(iii) Methodes of assessment of student's cognitive skills.****c. Interpersonal Skills and Responsibility****(i) Description of the interpersonal skills and capacity to carry responsibility to be developed.****(ii) Teaching strategies to be used to develop these skills and abilities****(iii) Methods of assessment of student's interpersonal skills and capacity to carry responsibility**



**d. Communication, Information Technology and Numerical Skills.**

**(i) Description of the skills to be developed in this domain.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's numerical and communication skills.**

**e. Psychomotor Skills (if applicable)**

**(i) Description of the psychomotor skills to be developed and level of performance required.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's psychomotor skills.**

**5 - Schedule of Assessment Tasks for Students During the Semester**

Assessment	Assessment task (eg. essay, test, group project, examination, etc)	Week due	Proportion of final Assessment
1	Final Exam		40
2	Midterm Exam 1		15
3	Midterm Exam 2		15
4	Test 1		5
5	Test 2		5
6	Discussion		5
7	Graded Exercises 1		5
8	Graded Exercises 2		10

## D. Student Support

**1 - Arrangements for availability of faculty for individual student consultations and academic advice. (include amount of time faculty are available each week)**

## E. Learning Resources

### 1 - Required Text(s).

Burn, Martin Barnett, Peter Marshall, "Business Strategies for Virtual Organizations", Elsevier, 2001  
ISBN-13 9780750649438 ISBN-10 0750649437

### 2 - Essential References

Burn, Martin Barnett, Peter Marshall, "Business Strategies for Virtual Organizations", Elsevier, 2001  
ISBN-13 9780750649438 ISBN-10 0750649437

### 3 - Recommended Books and Reference Material (Journals, Reports, ets) (Attach List)

### 4 - Electronic Materials, Web Sites etc.

### 5 - Other Learning material such as computer-based programs/CD, professional standards/regulations

## F. Facilities Required

**Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)**

### 1. Accommodation (Lecture rooms, laboratories, etc.)

### 2. Computing resources

### 3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)

## G . Course Evaluation and Improvement Processes

### 1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching

### 2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department

### 3 Processes for Improvement of Teaching

4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)

### 5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.

# Course Specification

Institution	King Abdulaziz University
College / Department	Faculty of Computing and Information Technology / Information Technology

## A - Course Identification and General Information

<b>1 - Course Title and code:</b>	Computer Skills / CPIT-100
<b>2 - Credit hours:</b>	3
<b>3 - Program in which the course is offered:</b>	B.S.Information Technology
<b>4 - Name of Faculty member responsible for the course</b>	Mr. Mutasim Fallah Jarrah
<b>5 - Level/year at which this course is offered</b>	Freshman -100
<b>6 - Co-requisites for this course (if any)</b>	
<b>7 - Pre-requisites for this course (if any)</b>	
<b>8 - Location if not offered in main campus</b>	Boys - Sulimania , Girls - Sulimania , Girls - Faisalia , Boys - North Jeddah , Girls - North Jeddah

## B - Objectives

<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>	
1	Define “ Fundamentals of Information Technology ” and identify types of computers, software, memory units and networks for suitability performance for different users and place/situations, also the Coordination of cells (numbers, text, ranges of cells), and the tasks of searching for information via the Web using search engines.
2	Identify main parts of computers ways to use a computers at work, education. And the sources of e-learning on the Internet, and components of e-learning management systems.
3	Comparison between the programs, operating systems and application software, Identify the types of networks, e-mail, Internet and communications technology, Identify ways to use a computer at work, education and everyday life, Identify the aspects of health, insurance and privacy issues and legal issues by using computers, and compare to some of the applications on the e-learning system.
4	Dealing with computers and work within the desktop environment, and desktop icons, also dealing with systems and databases (open, close and adjust the basic settings).
5	Organize files and directories / folders, to copy, transfer and delete files and directories / folders, also organize formats the document (application styles, page numbering, add header and footer), and organize a database (the design and planning) and create a table with fields and attributes, also organize objects and produce charts and importing images and other objects.
6	Modify of the properties of search and text-editing tools, printing options, frames, the feature to check spelling and grammar, some advanced features associated with the word processor, and Use of mail merge tools, also modify ( add / insert) rows and columns, text, slides, copy, transfer and delete in your presentations.

<b>1 - Summary of the main learning outcomes for students enrolled in the course</b>	
7	Implementation of the basic processes for dealing with the program (open the establishment and coordination of conservation and closing documents).
8	Add pictures, AutoShapes and importing objects to the document.
9	Adjust the basic settings and insert standard tables.
10	Execute basic operations to deal with data tables (open, save, close).
11	Prepare new spreadsheets and the exchange of documents, also prepare of presentation for printing and publishing.
12	Write the data into the worksheet and select, copy, move, delete, search, replace, sort the data, and modify the attributes of the planning and the fields and update the database.
13	Use of mathematical, logical formulas, functions, use of models and adjust the layout models, also use the Internet Explorer browser and modify the basic settings.
14	Reproduce and retrieval of information from existing databases using the query, selection tools, sorting, and produce Dealing with software for e-mail (open and close and adjust the main settings), and produce bookmarks for web pages and use, also produce presentations using the properties of the slide layout and add text and images to your slides.
15	Operate the applications, presentations, and close and adjust the basic settings and the exchange of documents.
16	Describe the ways of addressing messages from (send a message, use the copy operations, transportation and deletions within the messages, read and reply to messages).
17	Arrange of addresses using the address book and distribution lists and organize your messages.
18	Review Web browsing and access to the address of the Web site.
19	Discover the importance of the concept of distance education as a strategy for education and understand the role of students in self-learning.
20	Explain the basics and principles of e-learning.
<b>2 - Briefly describe any plans for developing and improving the course that are being implemented.</b>	

**C - Course Description** ( Note: General description in the form to be used for the Bulletin or Handbook should be attached)

<b>1 - Topics to be Covered:</b>
The course introduces the students to the main concepts and terminologies of information technology, and equipped them with the knowledge to administer one of widely-used operating systems. Topics include Computer Skills Introduction to information Technology, Operating Systems (Microsoft Windows), Word Processing (Microsoft Word), Data Sheets (Microsoft Excel), Databases (Microsoft Access), Presentations (Microsoft Power Point), Internet (Microsoft IE), E-Mails (Microsoft Outlook), E-Learning and Distance Learning.

<b>2 - Course components (total contact hours per semester):</b>			
Lecture:	Tutorial:	Practical/Fieldwork/Internship	Other
3	2	0	

<b>3 - Additional private study/learning hours expected for students per week. (This should be an average for the semester not a specific requirement in each week):</b>

<b>4 - Development of Learning Outcomes in Domains of Learning</b>
For each of the domains of learning shown below indicate: <ul style="list-style-type: none"> <li>- A brief summary of the knowledge or skill the course is intended to develop;</li> <li>- A description of the teaching strategies to be used in the course to develop that knowledge or skill;</li> <li>- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.</li> </ul>
<b>a. Knowledge</b>
<b>(i) Description of the knowledge to be acquired</b>
Principles of Information Technology Operating Systems & File Management Windows

#### 4 - Development of Learning Outcomes in Domains of Learning

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.

##### a. Knowledge

Text Editor Program - Word

Electronic Table - Excel

Database Program - Access

PowerPoint

The Internet and E-mail Management

E-learning and Distance Learning

##### (ii) Teaching strategies to be used to develop that knowledge

###### Lectures

Instructor will teach the topics of the course emphasizing on the related course learning outcomes (CLOs), while student will take notes and read in the text book.

Student learning outcomes will be measured by Exams, and will take five exams (3 Electronic – first, second, final and two practical) at a pre-announced time. Each exam will be discussed in class to highlight the common mistakes that have been appeared in the answer sheets.

At the end of the semester there will be one major final exam that would cover the material that not covered during first and second exams of the course

##### (iii) Methods of assessment of knowledge acquired

1	Final Exam (Electronic Exam)
2	Exam 1 (Electronic Exam)
3	Exam 2 (Electronic Exam)
4	Exam 1 (Practice Exam)
5	Exam 2 (Practice Exam)

##### b. Cognitive Skills

##### (i) Cognitive skills to be developed

##### (ii) Teaching strategies to be used to develop these cognitive skills.

##### (iii) Methodes of assessment of student's cognitive skills.

**c. Interpersonal Skills and Responsibility**

**(i) Description of the interpersonal skills and capacity to carry responsibility to be developed.**

**(ii) Teaching strategies to be used to develop these skills and abilities**

**(iii) Methods of assessment of student's interpersonal skills and capacity to carry responsibility**

**d. Communication, Information Technology and Numerical Skills.**

**(i) Description of the skills to be developed in this domain.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's numerical and communication skills.**

**e. Psychomotor Skills (if applicable)**

**(i) Description of the psychomotor skills to be developed and level of performance required.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's psychomotor skills.**

## 5 - Schedule of Assessment Tasks for Students During the Semester

Assessment	Assessment task (eg. essay, test, group project, examination, etc)	Week due	Proportion of final Assessment
1	Final Exam (Electronic Exam)		30
2	Exam 1 (Electronic Exam)		10
3	Exam 2 (Electronic Exam)		10
4	Exam 1 (Practice Exam)		25
5	Exam 2 (Practice Exam)		25

## D. Student Support

**1 - Arrangements for availability of faculty for individual student consultations and academic advice. (include amount of time faculty are available each week)**

## E. Learning Resources

<b>1 - Required Text(s).</b> Burn, Martin Barnett, Peter Marshall, "Business Strategies for Virtual Organizations", Elsevier, 2001 ISBN-13 9780750649438 ISBN-10 0750649437
<b>2 - Essential References</b> Burn, Martin Barnett, Peter Marshall, "Business Strategies for Virtual Organizations", Elsevier, 2001 ISBN-13 9780750649438 ISBN-10 0750649437
<b>3 - Recommended Books and Reference Material (Journals, Reports, etc) (Attach List)</b>
<b>4 - Electronic Materials, Web Sites etc.</b>
<b>5 - Other Learning material such as computer-based programs/CD, professional standards/regulations</b>

## F. Facilities Required

<b>Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)</b>
<b>1. Accommodation (Lecture rooms, laboratories, etc.)</b>
<b>2. Computing resources</b>
<b>3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)</b>

## **G . Course Evaluation and Improvement Processes**

<b>1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching</b>
<b>2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department</b>
<b>3 Processes for Improvement of Teaching</b>
<b>4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)</b>
<b>5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.</b>



# Course Specification

Institution	King Abdulaziz University
College / Department	Faculty of Computing and Information Technology / Information Technology

## A - Course Identification and General Information

<b>1 - Course Title and code:</b>	Introduction to Computing / CPIT-201
<b>2 - Credit hours:</b>	3
<b>3 - Program in which the course is offered:</b>	B.S.Information Technology
<b>4 - Name of Faculty member responsible for the course</b>	Mr. Wafaa Mohib Shalash
<b>5 - Level/year at which this course is offered</b>	Sophomore - 200
<b>6 - Co-requisites for this course (if any)</b>	
<b>7 - Pre-requisites for this course (if any)</b>	
<b>8 - Location if not offered in main campus</b>	Boys - Sulimania , Girls - Sulimania , Girls - Faisalia , Boys - North Jeddah , Girls - North Jeddah

## B - Objectives

<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>
1 Identify the historical development of computer science and technologies and their applications.
2 Distinguish and converting between different number systems.
3 Describe how computer represent, manipulate different data types and how to communicate with peripheral devices.
4 Describe the basic structures and functional components of computer hardware.
5 Describe basic operating systems functions and how they do it.
6 Compare different operating systems.
7 Describe constructions and operation of computer networks, applications of networks, Internet and security.
8 Identify the basics of software engineering discipline and software life cycle.
9 Compare different software engineering methodologies.
10 Recognize the commonality and diversity among programming languages and their associated methodologies.
11 Describe major computer science subject areas and their relevance.
12 Apply software tools and systems for productivity, communications, learning, social networking and collaboration.
13 Relates understanding computers basics to some topics such as security, privacy, liability and social awareness.
<b>2 - Briefly describe any plans for developing and improving the course that are being implemented.</b>

**C - Course Description** ( Note: General description in the form to be used for the Bulletin or Handbook should be attached)

<b>1 - Topics to be Covered:</b>
Topics include: Course Introduction

<b>2 - Course components (total contact hours per semester):</b>			
Lecture:	Tutorial:	Practical/Fieldwork/Internship	Other
3	1	0	

<b>3 - Additional private study/learning hours expected for students per week. (This should be an average for the semester not a specific requirement in each week):</b>
--

<b>4 - Development of Learning Outcomes in Domains of Learning</b>	
For each of the domains of learning shown below indicate:	
<ul style="list-style-type: none"> <li>- A brief summary of the knowledge or skill the course is intended to develop;</li> <li>- A description of the teaching strategies to be used in the course to develop that knowledge or skill;</li> <li>- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.</li> </ul>	
<b>a. Knowledge</b>	
<b>(i) Description of the knowledge to be acquired</b>	
<ul style="list-style-type: none"> <li>Programming Language</li> <li>Introduction to computer</li> <li>Number System and Data Storage</li> <li>Operations on Bits</li> <li>Computer Organization</li> <li>Computer Networks</li> <li>Operating System</li> <li>Software Engineering</li> </ul>	
<b>(ii) Teaching strategies to be used to develop that knowledge</b>	
<b>(iii) Methods of assessment of knowledge acquired</b>	
1	Final Exam
2	Midterm Exam 1
3	Midterm Exam 2
4	Quiz 1
5	Quiz 2
6	Homework
7	Presentation
<b>b. Cognitive Skills</b>	
<b>(i) Cognitive skills to be developed</b>	
<b>(ii) Teaching strategies to be used to develop these cognitive skills.</b>	
<b>(iii) Methodes of assessment of student's cognitive skills.</b>	

**c. Interpersonal Skills and Responsibility**

**(i) Description of the interpersonal skills and capacity to carry responsibility to be developed.**

**(ii) Teaching strategies to be used to develop these skills and abilities**

**(iii) Methods of assessment of student's interpersonal skills and capacity to carry responsibility**

**d. Communication, Information Technology and Numerical Skills.**

**(i) Description of the skills to be developed in this domain.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's numerical and communication skills.**

**e. Psychomotor Skills (if applicable)**

**(i) Description of the psychomotor skills to be developed and level of performance required.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's psychomotor skills.**

## 5 - Schedule of Assessment Tasks for Students During the Semester

Assessment	Assessment task (eg. essay, test, group project, examination, etc)	Week due	Proportion of final Assessment
1	Final Exam		35
2	Midterm Exam 1		15
3	Midterm Exam 2		15
4	Quiz 1		5
5	Quiz 2		5
6	Homework		15
7	Presentation		10

## D. Student Support

**1 - Arrangements for availability of faculty for individual student consultations and academic advice. (include amount of time faculty are available each week)**

## E. Learning Resources

<b>1 - Required Text(s).</b> Gilberg, Behrouz A. Forouzan, "Foundations of Computer Science", Course Technology; 2 edition (February 15, 2007) ISBN-13 9781418836092 ISBN-10 1418836095
<b>2 - Essential References</b> Gilberg, Behrouz A. Forouzan, "Foundations of Computer Science", Course Technology; 2 edition (February 15, 2007) ISBN-13 9781418836092 ISBN-10 1418836095
<b>3 - Recommended Books and Reference Material (Journals, Reports, ets) (Attach List)</b>
<b>4 - Electronic Materials, Web Sites etc.</b>
<b>5 - Other Learning material such as computer-based programs/CD, professional standards/regulations</b>

## F. Facilities Required

<b>Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)</b>
<b>1. Accommodation (Lecture rooms, laboratories, etc.)</b>
<b>2. Computing resources</b>
<b>3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)</b>

## **G . Course Evaluation and Improvement Processes**

<b>1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching</b>
<b>2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department</b>
<b>3 Processes for Improvement of Teaching</b>
<b>4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)</b>
<b>5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.</b>

# Course Specification

Institution	King Abdulaziz University
College / Department	Faculty of Computing and Information Technology / Information Technology

## A - Course Identification and General Information

<b>1 - Course Title and code:</b>	Computer Architecture / CPIT-210
<b>2 - Credit hours:</b>	3
<b>3 - Program in which the course is offered:</b>	B.S.Information Technology
<b>4 - Name of Faculty member responsible for the course</b>	Dr. Muhammad Muhammad Abdulhamid Khamis
<b>5 - Level/year at which this course is offered</b>	Sophomore - 200
<b>6 - Co-requisites for this course (if any)</b>	
<b>7 - Pre-requisites for this course (if any)</b>	CPCS-202
<b>8 - Location if not offered in main campus</b>	Boys - Sulimania , Girls - Sulimania , Girls - Faisalia , Boys - North Jeddah , Girls - North Jeddah

## B - Objectives

<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>	
1	State the difference between analog and digital systems and how to digitize analog system.
2	Identify, use and translate basic number systems and describe fundamental digital logic and its relationship to binary numbers and performing the different arithmetic operations.
3	Define the basic operations and laws of Boolean algebra and prove the laws using truth tables.
4	Apply the laws of Boolean algebra to simplify the logical expressions.
5	Convert word description of a logical system to logical expression and hence implementing its corresponding logical circuits.
6	Model, Design and implementation of the different arithmetic and logic operation using logic circuit.
7	Analyze and design of efficient combinational and sequential logic circuit implementations from functional description of digital systems.
8	Practice the use CAD tools to simulate and verify logic circuits.
9	Explain the concept of a basic instruction set architecture and describe the von Neumann fetch-decode-execute instruction cycle.
10	Describe and use the components of a CPU, input/output hardware and peripherals and how they work, and what are the input/output interfaces of the various components.
11	Explain the design of a prototype CPU that executes a small set of selected instructions to demonstrate different instructions categories and their corresponding micro programmes.

<b>1 - Summary of the main learning outcomes for students enrolled in the course</b>	
12	Explain the different buses architectures used for computer components interconnection.
13	Describe the major cache design options (direct-mapped, associative, n-way set associative) and calculate the performance benefits of using cache memory.
14	Explore the basic issues in memory organization /design and I/O Principles.
15	Explain how address of an operand is specified and how the bits of instruction are organized to define the operation operand address.
16	Expand the gained knowledge to solve new logic or computer architecture design problems.
17	Define the abstract model of any logic system, decompose it into its basic components, and give the elaborated design of each component and their interconnection.
18	Practice the hardware design with group to build physical logic system to solve real problem as course project.
19	Write assembly language programs to solve different programming problems, and able to trace given assembly program to know its output and function.
<b>2 - Briefly describe any plans for developing and improving the course that are being implemented.</b>	

**C - Course Description** ( Note: General description in the form to be used for the Bulletin or Handbook should be attached)

<b>1 - Topics to be Covered:</b>
Topics include: Analog and digital system ,Number System ,W3 Logic gates, Boolean algebra Handouts ,W5 Comparator + Decoder Handouts HW1 ,W6 Encode + Multiplexer Handouts ,W7 F/F and Counter Handouts ,W8 Buses and Computer Architecture Chapter 3 HW2 ,W9 Cache memory Chapter 4 ,W11 Computer Arithmetic Chapter 9 ,W12 Instruction Sets: Characteristics and Functions Chapter 10 HW4 ,W13 Instruction Sets: Addressing Modes and Format Chapter 11 ,W14 Input/Output Chapter 7

<b>2 - Course components (total contact hours per semester):</b>			
Lecture:	Tutorial:	Practical/Fieldwork/Internship	Other
3	1	0	

<b>3 - Additional private study/learning hours expected for students per week. (This should be an average for the semester not a specific requirement in each week):</b>

<b>4 - Development of Learning Outcomes in Domains of Learning</b>
For each of the domains of learning shown below indicate:
- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.
<b>a. Knowledge</b>
<b>(i) Description of the knowledge to be acquired</b>
Analog and digital system
Number System
W3 Logic gates, Boolean algebra Handouts
W5 Comparator + Decoder Handouts HW1
W6 Encode + Multiplexer Handouts
W7 F/F and Counter Handouts
W8 Buses and Computer Architecture Chapter 3 HW2
W9 Cache memory Chapter 4
W11 Computer Arithmetic Chapter 9
W12 Instruction Sets: Characteristics and Functions Chapter 10 HW4

**4 - Development of Learning Outcomes in Domains of Learning**

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.

**a. Knowledge**

W13 Instruction Sets: Addressing Modes and Format Chapter 11

W14 Input/Output Chapter 7

**(ii) Teaching strategies to be used to develop that knowledge****(iii) Methods of assessment of knowledge acquired**

1	Final Exam
2	Test
3	Midterm Exam
4	Quiz 1
5	Quiz 2
6	Quiz 3
7	Graded Exercises 1
8	Graded Exercises 2
9	Lab Test
10	Project Report

**b. Cognitive Skills****(i) Cognitive skills to be developed****(ii) Teaching strategies to be used to develop these cognitive skills.****(iii) Methodes of assessment of student's cognitive skills.****c. Interpersonal Skills and Responsibility****(i) Description of the interpersonal skills and capacity to carry responsibility to be developed.****(ii) Teaching strategies to be used to develop these skills and abilities****(iii) Methods of assessment of student's interpersonal skills and capacity to carry responsibility**



**d. Communication, Information Technology and Numerical Skills.**

**(i) Description of the skills to be developed in this domain.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's numerical and communication skills.**

**e. Psychomotor Skills (if applicable)**

**(i) Description of the psychomotor skills to be developed and level of performance required.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's psychomotor skills.**

**5 - Schedule of Assessment Tasks for Students During the Semester**

Assessment	Assessment task (eg. essay, test, group project, examination, etc)	Week due	Proportion of final Assessment
1	Final Exam		30
2	Test		10
3	Midterm Exam		20
4	Quiz 1		3
5	Quiz 2		3.5
6	Quiz 3		3.5
7	Graded Exercises 1		2.5
8	Graded Exercises 2		2.5
9	Lab Test		15
10	Project Report		10

## D. Student Support

**1 - Arrangements for availability of faculty for individual student consultations and academic advice. (include amount of time faculty are available each week)**

## E. Learning Resources

### 1 - Required Text(s).

Mano, "Digital Design", Prentice Hall, 3rd Edition, 2001  
ISBN-13 9780130621214 ISBN-10 0763734160

### 2 - Essential References

Mano, "Digital Design", Prentice Hall, 3rd Edition, 2001  
ISBN-13 9780130621214 ISBN-10 0763734160

### 3 - Recommended Books and Reference Material (Journals, Reports, ets) (Attach List)

### 4 - Electronic Materials, Web Sites etc.

### 5 - Other Learning material such as computer-based programs/CD, professional standards/regulations

## F. Facilities Required

**Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)**

### 1. Accommodation (Lecture rooms, laboratories, etc.)

### 2. Computing resources

### 3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)

## G . Course Evaluation and Improvement Processes

### 1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching

### 2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department

### 3 Processes for Improvement of Teaching

**4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)**

### 5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.

# Course Specification

Institution	King Abdulaziz University
College / Department	Faculty of Computing and Information Technology / Information Technology

## A - Course Identification and General Information

<b>1 - Course Title and code:</b>	Introduction to IT / CPIT-220
<b>2 - Credit hours:</b>	3
<b>3 - Program in which the course is offered:</b>	B.S.Information Technology
<b>4 - Name of Faculty member responsible for the course</b>	Mr. Fazal Qudus Khan
<b>5 - Level/year at which this course is offered</b>	Sophomore - 200
<b>6 - Co-requisites for this course (if any)</b>	
<b>7 - Pre-requisites for this course (if any)</b>	CPIT-201
<b>8 - Location if not offered in main campus</b>	Boys - Sulimania , Girls - Sulimania , Girls - Faisalia , Boys - North Jeddah , Girls - North Jeddah

## B - Objectives

<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>	
1	Define "Information Technology" and give Examples of Information Technologies.
2	Compare between analog and digital representation of information techniques for transmission and storage.
3	Inspect the advantages of representing information in digital format for processing, communication and storage.
4	Identify the standards used to identify Web Resources to know the complex process of page retrieval (Upload and Download)
5	Differentiate between (a) web browser and Web server and (b) Internet and the Web.
6	Prepare a well organized and summarized presentation on the topic assigned for communicating effectively with a range of audience.
7	Define system Software and Discuss about the importance of Operating systems.
8	Identify the Hardware components of the computer system for selection in Performance, cost and Suitability
9	Manipulate the physical and mathematical basis of Sound Waves for elaborating on the three steps of audio digitization.
10	Identify the Computing and mathematical basis of digitizing Images.
11	Recognize the potential uses of database programs, Structured Query Language and Relational Database Management System.
12	Recognize the use of Information systems in organizations for decision making at the different levels of management.
13	Distinguish between the tasks carried out at different phases of the Software Development Life Cycle (SDLC).
14	Experiment using Matlab Simulink to observe the effect of Noise on the transmitted electrical signal.

<b>1 - Summary of the main learning outcomes for students enrolled in the course</b>	
15	Identify sources of transmission errors, Its detection and correction for digital transmission systems.
16	Contrast between (a) Wired and Wireless and (b) Peer to Peer and Client/Server computing.
17	Contrast circuit-switching and packet switching networks and explain their respective strengths and weaknesses.
18	Identify the different types of Wired and Wireless Communication media.
19	Recognize and protect from Computer crimes, criminals, Security threats and cybercrime.
<b>2 - Briefly describe any plans for developing and improving the course that are being implemented.</b>	

**C - Course Description** ( Note: General description in the form to be used for the Bulletin or Handbook should be attached)

<b>1 - Topics to be Covered:</b>
<p>Introduction to Information Technology” Provides an overview and understanding the conceptual base of Information Technology. Students will find this a helpful Bridge course to upper level courses in Information Technology. Introduction to Information Technology (CPIT-220) focuses on providing newly specialized IT students with the knowledge and skills related to understanding existing and emerging information technologies. This course is supported with a laboratory that aims to equip students with practical knowledge and presentation skills.</p> <p>The purpose of this course is threefold:</p> <ol style="list-style-type: none"> <li>(1) To provide comprehensive and engaging overview of cutting-edge information technologies,</li> <li>(2) To identify and discuss fundamental principles underlying these technologies, and</li> <li>(3) To relate these technologies with practical life.</li> </ol> <p>Topics include Introduction to information technology, Digital and analog signals, inside the system unit, system software’s, Databases and Information systems, System analysis and design, information systems and databases, Networking, Privacy, Crime and Security.</p>

<b>2 - Course components (total contact hours per semester):</b>			
Lecture:	Tutorial:	Practical/Fieldwork/Internship	Other
3	1	0	

<b>3 - Additional private study/learning hours expected for students per week. (This should be an average for the semester not a specific requirement in each week):</b>

<b>4 - Development of Learning Outcomes in Domains of Learning</b>
<p>For each of the domains of learning shown below indicate:</p> <ul style="list-style-type: none"> <li>- A brief summary of the knowledge or skill the course is intended to develop;</li> <li>- A description of the teaching strategies to be used in the course to develop that knowledge or skill;</li> <li>- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.</li> </ul>
<b>a. Knowledge</b>
<p><b>(i) Description of the knowledge to be acquired</b></p> <p>Introduction To Information Technology  Understanding the Digital Domain  The internet and the World Wide Web  System Software  Inside the system Unit  Creating Digital Audio  Creating Digital image and Video  Database and Information Systems  System analysis and Design</p>

#### **4 - Development of Learning Outcomes in Domains of Learning**

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.

##### **a. Knowledge**

Foundamentals of Communications  
Networks:Communicating and sharing resources  
Wired and Wireless  
Privacy, Crime and Security

#### **4 - Development of Learning Outcomes in Domains of Learning**

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.

#### **a. Knowledge**

##### **(ii) Teaching strategies to be used to develop that knowledge**

##### **Lectures**

Instructor will teach the topics of the course emphasizing on related course learning outcomes (CLOs), while student will take notes and read the text book.

At the end of each week, students will have to submit a Lecture Diary related to the topics covered in that week. These Lecture diaries are a sort of feedback from the student to know the difficulties they are facing and a way to enhance the method of delivery of the Lectures.

Students will take two exams (Excluding the Final exam) at a pre-announced time. Each exam will be discussed in class to highlight on the common mistakes that have been appeared in the answer sheets. At the end of each Exam, The Student will be informed of the correct answers by posting the answer key on fcit.kau.edu.sa website.

At the end of the semester there will be one major final exam that would cover all the main topics of the course.

##### **Labs**

During the Labs session, Exercise Questions from the book, Case Studies, Home Works and Some problems will be given to the students related to the Topics covered in a particular Week.

Students will be divided into teams; each team will present the solution of some homework problem. Instructor will guide the students during the Labs session.

Students will be exposed to the practicalities in different up-to-date Information technologies. Students will learn by doing in the Labs.

#### 4 - Development of Learning Outcomes in Domains of Learning

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.

##### a. Knowledge

##### (ii) Teaching strategies to be used to develop that knowledge

###### Term project

Scope:

This project aims to improve student's:

Technical thinking

Team work

Internet searching skills

Presentation and reporting skills

Method:

This project consists of 2 parts:

Part I: Group Project

In this part every group will identify a state of the art IT system such as GPS, parallel computing, Bluetooth, SMS, PDA, LED TV, E-money, flash memory... etc

Deliveries:

Each group is asked to give a 7-minute power-point presentation. In this presentation, the following questions are expected to be answered:

What is the purpose of this technology?

Why this technology is an IT technology?

How this technology works? (this must be supported with graphical aid)

What are the advantages and disadvantages of this technology?

The future of this technology?

Part II: Individual Project

In this part each member of the group is asked to build up an IT system that benefits from the use of the technology selected in part I. The students are encouraged to use their imagination to apply the technology to solve a real life problem.

Deliveries:

Each student is asked to submit a report (between 6 to 10 pages). This report should cover following points:

The Problem

Existing solutions (if any)

The IT solution (your project)

Project components

Project block diagram

Disadvantages

Any other related issues

Evaluation (10 Marks):

Part I (4 marks):

Groups will be evaluated upon the power-point presentation and the questions posed by the audience during discussion. One member of the group will give the presentation and the other members will be exposed to the questions. All group members should participate and attend the presentation. Absent members will be given 0 in part I.

Part II (6 marks):

Individuals will be evaluated upon the novelty of the project's idea and the quality of submitted report.

Notes:

Ideas for Part I and Part II must not be repeated.

For Part I, groups must register the title of their IT system with Course Coordinator by sending an email that contains the names of the group members and the IT system chosen. Groups will be informed whether they can go ahead with the chosen IT system or find another IT system.

#### 4 - Development of Learning Outcomes in Domains of Learning

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.

##### a. Knowledge

##### (ii) Teaching strategies to be used to develop that knowledge

For Part II, individuals must register the title of their project with Course Coordinator by sending an email that contains the title and brief description of the project and how it is related to Part II. Individuals will be informed whether they can go ahead with chosen project or to find another one.

Groups and Individuals are encouraged to discuss their ideas with course coordinator.

Copying will result in grade loss for both copying and copied from parties

##### **ATTENDANCE and class participation**

Your regular attendance will enhance your final grades.

When your absence exceeds the 25 % limit (~ 10 sessions), a report will be send to the Academic Affairs to take the necessary action. As a result, you may get DN or AF in the course.

##### **Lecture Diaries**

Objective:

the diary will improve on the student's reporting skills and provide a channel where a student can communicate his impressions and thoughts on what is discussed in the class room.

How long is a diary?

The diary is a mini report (between 120 to 150 words)

How to submit a diary?

The diary is submitted electronically by email. Student must write in the title of the email the following information on the following format:

LD#?\_Topic Number\_Student Name\_Student Number\_student section

Example:

LD#6\_12,13\_Ahmed Ali\_090980\_C3

The text of the diary is typed in the body of the email (NOT AS A FILE ATTACHMENT!)

When do I have to submit a diary?

The deadline for weekly diary is on Friday 12:00 am of every week (sharp deadline) i.e Before Jumma Prayers.

What is written in the diary?

Student must consider following points while writing his diary:

? What have I learned in this week's lectures?

? What is my opinion on what was presented?

? What did I like about this week's lectures? and why?

? What was difficult to understand? and why?

? What am I going to do to understand the difficult points?

? A student must focus on the highlights and important points raised in the weekly lectures to pick up the topic of his diary.

Student can choose to answer all or some of the above questions. A good diary will mainly answer question 2, 3, 4 and 5. A bad diary will answer only question 1.

##### **Quizzes**

There will be three Quizzes before selected classes. These Quizzes have no weight in the overall assessment, However it does contribute to revise the material covered.

##### (iii) Methods of assessment of knowledge acquired

1	Final Exam
2	Midterm Exam1
3	Midterm Exam2



**4 - Development of Learning Outcomes in Domains of Learning**

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.

**a. Knowledge****(iii) Methods of assessment of knowledge acquired**

4	<a href="#">Attendance and Class participation</a>
5	<a href="#">Labs</a>
6	<a href="#">Lecture Diaries</a>

**b. Cognitive Skills****(i) Cognitive skills to be developed****(ii) Teaching strategies to be used to develop these cognitive skills.****(iii) Methodes of assessment of student's cognitive skills.****c. Interpersonal Skills and Responsibility****(i) Description of the interpersonal skills and capacity to carry responsibility to be developed.****(ii) Teaching strategies to be used to develop these skills and abilities****(iii) Methods of assessment of student's interpersonal skills and capacity to carry responsibility**

**d. Communication, Information Technology and Numerical Skills.**

**(i) Description of the skills to be developed in this domain.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's numerical and communication skills.**

**e. Psychomotor Skills (if applicable)**

**(i) Description of the psychomotor skills to be developed and level of performance required.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's psychomotor skills.**

**5 - Schedule of Assessment Tasks for Students During the Semester**

Assessment	Assessment task (eg. essay, test, group project, examination, etc)	Week due	Proportion of final Assessment
1	Final Exam		40
2	Midterm Exam1		15
3	Midterm Exam2		15
4	Attendance and Class participation		5
5	Labs		20
6	Lecture Diaries		5

## D. Student Support

**1 - Arrangements for availability of faculty for individual student consultations and academic advice. (include amount of time faculty are available each week)**

## E. Learning Resources

### 1 - Required Text(s).

Turban, R. K. Rainer, R. E. Potter, "Introduction to Information Technology", Wiley, 3rd Edition, 2004  
ISBN-13 9780471347804 ISBN-10 0471347809

### 2 - Essential References

Turban, R. K. Rainer, R. E. Potter, "Introduction to Information Technology", Wiley, 3rd Edition, 2004  
ISBN-13 9780471347804 ISBN-10 0471347809

### 3 - Recommended Books and Reference Material (Journals, Reports, ets) (Attach List)

### 4 - Electronic Materials, Web Sites etc.

### 5 - Other Learning material such as computer-based programs/CD, professional standards/regulations

## F. Facilities Required

**Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)**

### 1. Accommodation (Lecture rooms, laboratories, etc.)

### 2. Computing resources

### 3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)

## G . Course Evaluation and Improvement Processes

### 1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching

### 2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department

### 3 Processes for Improvement of Teaching

**4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)**

### 5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.

# Course Specification

Institution	King Abdulaziz University
College / Department	Faculty of Computing and Information Technology / Information Technology

## A - Course Identification and General Information

<b>1 - Course Title and code:</b>	Technical Writing / CPIT-221
<b>2 - Credit hours:</b>	2
<b>3 - Program in which the course is offered:</b>	B.S.Information Technology
<b>4 - Name of Faculty member responsible for the course</b>	Mr. Marwa Muhammad Gadalla
<b>5 - Level/year at which this course is offered</b>	Sophomore - 200
<b>6 - Co-requisites for this course (if any)</b>	
<b>7 - Pre-requisites for this course (if any)</b>	
<b>8 - Location if not offered in main campus</b>	Boys - Sulimania , Girls - Sulimania , Girls - Faisalia , Boys - North Jeddah , Girls - North Jeddah

## B - Objectives

<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>	
1	Write a personal CV and cover letter to match a given job specification, with proper formatting and whose content and grammar would be appealing to a typical employer
2	Identify actions that should be performed or avoided before, during, and after a job interview
3	Describe areas and issues where the introduction of technology has socially impacted society
4	Use brainstorming to appropriately focus a given broad topic and develop an interpretive, scoped research question while identifying the type of the chosen question
5	Define purpose, audience, context, scope, medium, and types of proposals
6	Divide and plan work in a collaborative, time-limited writing environment
7	Create a research proposal including purpose, significance, research plan, and work schedule that persuades the instructor to approve the proposed research idea
8	Produce a primary research source such as an interview or survey to serve a given research topic while differentiating between the advantages/disadvantages of primary and secondary research
9	Evaluate the credibility of an Internet source based on authorship, accuracy, bias, and currency
10	Apply operators, tools, options, and rules to develop effective searches in Google, meta-search engines, or subject directories while explaining the appropriate use of each
11	Identify plagiarism due to an improper paraphrase or quotation
12	Integrate paraphrased text or direct quotations appropriately in a report to support a given argument along with a

<b>1 - Summary of the main learning outcomes for students enrolled in the course</b>	
13	Choose an appropriate method of development to effectively sequence given material and conversely identify what method of development is used given a certain sequence
14	Create an outline with suitable headings, subheadings, hierarchy, and numbering to organize research material from a cluster map
15	Write unified and coherent paragraphs with a clear topic sentence, supporting details, and optimal length
16	Write an informative abstract while distinguishing the differences between an abstract and an introduction/conclusion
17	Write an introduction with a strong opening, background subject, purpose, scope, and preview and a through conclusion with a strong final point
18	Support a stance with facts, statistics, examples, and debate of the conflicting opinions
19	Write concise, informative, properly punctuated, and parallel titles that properly reflect purpose, tone, and scope
20	Identify whether a given argument suffers from a logic error, and what type of logic error
21	Rewrite an unclear, in-concise, or incoherent passage to remove the lack of clarity, conciseness, or coherence respectively
22	Identify examples of unethical writing
23	Produce a report that follows IEEE formatting standards in terms of margins, spacing, font, alignment, headers, and proper page numbering
24	Integrate graphics with text in a formal report using suitable naming, numbering, and positioning
25	Create a table or graph to represent given data while being able to choose when to appropriately use each
26	Give an organized presentation with a proper introduction, conclusion, and transitions and at the end, handle audience questions effectively
27	Deliver an enthusiastic presentation with good eye contact, voice, and body language
28	Create professional and attractive presentation slides
29	Assess and evaluate other's work based on a presentation
<b>2 - Briefly describe any plans for developing and improving the course that are being implemented.</b>	

**C - Course Description** ( Note: General description in the form to be used for the Bulletin or Handbook should be attached)

<b>1 - Topics to be Covered:</b>

<b>2 - Course components (total contact hours per semester):</b>			
Lecture:	Tutorial:	Practical/Fieldwork/Internship	Other
1	2	0	

<b>3 - Additional private study/learning hours expected for students per week. (This should be an average for the semester not a specific requirement in each week):</b>

<b>4 - Development of Learning Outcomes in Domains of Learning</b>
For each of the domains of learning shown below indicate: <ul style="list-style-type: none"> <li>- A brief summary of the knowledge or skill the course is intended to develop;</li> <li>- A description of the teaching strategies to be used in the course to develop that knowledge or skill;</li> <li>- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.</li> </ul>
<b>a. Knowledge</b>
<b>(i) Description of the knowledge to be acquired</b>
<b>(ii) Teaching strategies to be used to develop that knowledge</b>

**4 - Development of Learning Outcomes in Domains of Learning**

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.

**a. Knowledge****(iii) Methods of assessment of knowledge acquired**

1	Final Exam
2	Development of Research Question
3	Proposal
4	Outline
5	First Draft
6	Final Research Report
7	Peer Evaluation
8	Instructor's Evaluation
9	Midterm Exam
10	CV and Cover Letter Assignment

**b. Cognitive Skills****(i) Cognitive skills to be developed****(ii) Teaching strategies to be used to develop these cognitive skills.****(iii) Methodes of assessment of student's cognitive skills.****c. Interpersonal Skills and Responsibility****(i) Description of the interpersonal skills and capacity to carry responsibility to be developed.****(ii) Teaching strategies to be used to develop these skills and abilities****(iii) Methods of assessment of student's interpersonal skills and capacity to carry responsibility**

**d. Communication, Information Technology and Numerical Skills.**

**(i) Description of the skills to be developed in this domain.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's numerical and communication skills.**

**e. Psychomotor Skills (if applicable)**

**(i) Description of the psychomotor skills to be developed and level of performance required.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's psychomotor skills.**

**5 - Schedule of Assessment Tasks for Students During the Semester**

Assessment	Assessment task (eg. essay, test, group project, examination, etc)	Week due	Proportion of final Assessment
1	Final Exam		20
2	Development of Research Question		5
3	Proposal		5
4	Outline		5
5	First Draft		5
6	Final Research Report		20
7	Peer Evaluation		3
8	Instructor's Evaluation		7
9	Midterm Exam		20
10	CV and Cover Letter Assignment		10

## D. Student Support

**1 - Arrangements for availability of faculty for individual student consultations and academic advice. (include amount of time faculty are available each week)**

## E. Learning Resources

### 1 - Required Text(s).

Warriner, "English Composition and Grammar: Complete Course", Holt Rinehart and Winston, 1998  
ISBN-13 9780153117367 ISBN-10 0153117362

### 2 - Essential References

Warriner, "English Composition and Grammar: Complete Course", Holt Rinehart and Winston, 1998  
ISBN-13 9780153117367 ISBN-10 0153117362

### 3 - Recommended Books and Reference Material (Journals, Reports, ets) (Attach List)

### 4 - Electronic Materials, Web Sites etc.

### 5 - Other Learning material such as computer-based programs/CD, professional standards/regulations

## F. Facilities Required

**Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)**

### 1. Accommodation (Lecture rooms, laboratories, etc.)

### 2. Computing resources

### 3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)

## G . Course Evaluation and Improvement Processes

### 1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching

### 2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department

### 3 Processes for Improvement of Teaching

**4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)**

### 5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.



# Course Specification

Institution	King Abdulaziz University
College / Department	Faculty of Computing and Information Technology / Information Technology

## A - Course Identification and General Information

<b>1 - Course Title and code:</b>	Databases (I) / CPIT-240
<b>2 - Credit hours:</b>	3
<b>3 - Program in which the course is offered:</b>	B.S.Information Technology
<b>4 - Name of Faculty member responsible for the course</b>	Dr. Muhammad Jaafar Alhaddad
<b>5 - Level/year at which this course is offered</b>	Sophomore - 200
<b>6 - Co-requisites for this course (if any)</b>	
<b>7 - Pre-requisites for this course (if any)</b>	CPCS-204
<b>8 - Location if not offered in main campus</b>	Boys - Sulimania , Girls - Sulimania , Girls - Faisalia , Boys - North Jeddah , Girls - North Jeddah

## B - Objectives

<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>
1 Define a Database, characteristics and functions of Database Management System and types of Database Users.
2 Distinguish between a Traditional File System and a Database System.
3 Compare the advantages and disadvantages of Database System with traditional File system.
4 Describe Data Models, Schemas, Instances, Three Schema Architecture and DBMS Component Modules.
5 Describe the Entity–Relationship (ER) modeling tool using Unified Modeling Language (UML).
6 Model the real world database systems using Entity Relationship Diagrams (ERD) from the requirements specification.
7 Define the Relational Data Model, its Constraints and the Relational Database Schemas.
8 State the Informal Design Guidelines for Relational Databases.
9 Illustrate the Definition of Functional Dependencies , Inference Rules, Equivalence of Sets of Functional Dependencies FDs, Minimal Sets of FDs.
10 List the three Normal Forms Based on Partial and Transitive Dependencies .
11 Apply normalization techniques to normalize a database.
12 Identify the data integrity and security requirements of the database.
13 Define the concept of Relational Algebra and the Relational Operations from Set Theory.
14 Apply Binary Relational Operations and Additional Relational Operations on database.
15 Design queries in Relational Algebra and Relational Calculus.

<b>1 - Summary of the main learning outcomes for students enrolled in the course</b>	
16	Convert a conceptual data model such as ER diagram into a relational logical schema using various mapping algorithms.
17	Define disk storage devices, files of records, unordered files, ordered files and hashed files.
18	Apply various operations on Files such as hashing.
19	List advantages of standardized SQL.
20	Demonstrate the use of SQL for database creation and maintenance.
21	Use SQL queries for data aggregation, calculations, views, sub-queries, embedded queries, manipulation, and report generation.
22	Design and implement a full real size database system.
<b>2 - Briefly describe any plans for developing and improving the course that are being implemented.</b>	

**C - Course Description** ( Note: General description in the form to be used for the Bulletin or Handbook should be attached)

<b>1 - Topics to be Covered:</b>
Data, Information, File System, Database and Database Users, Database System Concepts and Architecture, Data Modeling using the Entity Relationship (ER) Model, The Relational Data Model and Relational Database Constraints, Functional Dependencies and Normalization for Relational Databases, The Relational Algebra and Relational Calculus, Relational Database Design by ER and EER to Relational Mapping, Disk Storage, Basic File Structure and Hashing, SQL-99 Schema Definition, Constraints, Queries and Views (DDL and DML)

<b>2 - Course components (total contact hours per semester):</b>			
Lecture:	Tutorial:	Practical/Fieldwork/Internship	Other
3	3	1	

<b>3 - Additional private study/learning hours expected for students per week. (This should be an average for the semester not a specific requirement in each week):</b>

<b>4 - Development of Learning Outcomes in Domains of Learning</b>
For each of the domains of learning shown below indicate:
- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.
<b>a. Knowledge</b>
<b>(i) Description of the knowledge to be acquired</b>
Data, Information, File System, Database and Database Users
Database System Concepts and Architecture
Data Modeling using the Entity Relationship (ER) Model
The Relational Data Model and Relational Database Constraints
Functional Dependencies and Normalization for Relational Databases
The Relational Algebra and Relational Calculus
Relational Database Design by ER and EER to Relational Mapping
Disk Storage, Basic File Structure and Hashing (13.1 and 13.2)
SQL-99 Schema Definition, Constraints, Queries and Views (DDL and DML)
<b>(ii) Teaching strategies to be used to develop that knowledge</b>
<b>(iii) Methods of assessment of knowledge acquired</b>

**b. Cognitive Skills**

**(i) Cognitive skills to be developed**

**(ii) Teaching strategies to be used to develop these cognitive skills.**

**(iii) Methodes of assessment of student's cognitive skills.**

**c. Interpersonal Skills and Responsibility**

**(i) Description of the interpersonal skills and capacity to carry responsibility to be developed.**

**(ii) Teaching strategies to be used to develop these skills and abilities**

**(iii) Methods of assessment of student's interpersonal skills and capacity to carry responsibility**

**d. Communication, Information Technology and Numerical Skills.**

**(i) Description of the skills to be developed in this domain.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's numerical and communication skills.**

**e. Psychomotor Skills (if applicable)**

**(i) Description of the psychomotor skills to be developed and level of performance required.**

(ii) Methods of assessment of student development of skills.

#### 5 - Schedule of Assessment Tasks for Students During the Semester

Assessment	Assessment task (eg. essay, test, group project, examination, etc)	Week due	Proportion of final Assessment
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#### D. Student Support

1 - Arrangements for availability of faculty for individual student consultations and academic advice. (include amount of time faculty are available each week)

#### E. Learning Resources

##### 1 - Required Text(s).

Elmasri and Navathe, "Fundamentals of Database Systems", Addison Wesley, 5th Edition, 2006  
ISBN-13 9780321369574 ISBN-10 0321369572

##### 2 - Essential References

Elmasri and Navathe, "Fundamentals of Database Systems", Addison Wesley, 5th Edition, 2006  
ISBN-13 9780321369574 ISBN-10 0321369572

##### 3 - Recommended Books and Reference Material (Journals, Reports, ets) (Attach List)

##### 4 - Electronic Materials, Web Sites etc.

##### 5 - Other Learning material such as computer-based programs/CD, professional standards/regulations

#### F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)

##### 1. Accommodation (Lecture rooms, laboratories, etc.)

##### 2. Computing resources

##### 3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)

## **G . Course Evaluation and Improvement Processes**

<b>1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching</b>
<b>2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department</b>
<b>3 Processes for Improvement of Teaching</b>
<b>4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)</b>
<b>5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.</b>

# Course Specification

Institution	King Abdulaziz University
College / Department	Faculty of Computing and Information Technology / Information Technology

## A - Course Identification and General Information

<b>1 - Course Title and code:</b>	System Analysis and Design / CPIT-250
<b>2 - Credit hours:</b>	3
<b>3 - Program in which the course is offered:</b>	B.S.Information Technology
<b>4 - Name of Faculty member responsible for the course</b>	Mr. Majed Abdulkhaliq Alsayed Muhammad Alshishtawi
<b>5 - Level/year at which this course is offered</b>	Sophomore - 200
<b>6 - Co-requisites for this course (if any)</b>	
<b>7 - Pre-requisites for this course (if any)</b>	CPCS-204
<b>8 - Location if not offered in main campus</b>	Boys - Sulimania , Girls - Sulimania , Girls - Faisalia , Boys - North Jeddah , Girls - North Jeddah

## B - Objectives

<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>	
1	Describe the fundamental systems development life cycle , its four phase and the evolution of systems development methodologies.
2	Identify the different roles on the project team.
3	Describe the basic characteristics of object-oriented systems.
4	Identify the Unified Modeling Language (UML), Version 2.0 the Unified Process.
5	Illustrate the importance of linking the information system to business needs.
6	Describe how to assess technical, economic, organizational feasibility and perform a feasibility analysis.
7	Identify how projects are selected in some organizations.
8	Identify estimation and how to create a project work plan, and how to staff a project.
9	Describe how computer-aided software engineering, standards, and documentation improve the efficiency of a project
10	Identify how to reduce risk on a project and create a requirements definition.
11	Identify the requirements analysis techniques.
12	Illustrate when to use each requirements analysis technique.
13	Describe how to gather requirements using interviews, JAD sessions, questionnaires, document analysis, and observation.
14	Describe when to use each requirements-gathering technique.
15	Identify the rules , style guidelines for activity diagrams, the rules and style guidelines for use cases diagrams.

<b>1 - Summary of the main learning outcomes for students enrolled in the course</b>	
16	Describe the process used to create use cases and use case diagrams.
17	Identify functional models using activity diagrams, use cases, and use case diagrams.
18	Identify the use of use case points.
19	Describe the rules style guidelines for creating CRC cards, class diagrams, and object diagrams.
20	Describe the processes used to create CRC cards, class diagrams, and object diagrams.
21	Identify CRC cards, class diagrams, and object diagrams.
<b>2 - Briefly describe any plans for developing and improving the course that are being implemented.</b>	

**C - Course Description** ( Note: General description in the form to be used for the Bulletin or Handbook should be attached)

<b>1 - Topics to be Covered:</b>
CPIT 250 is an Introduction to systems Analysis and design .This course provides a methodical approach to developing computer systems including systems planning, analysis, design, and implementation. Emphasis is on the strategies and techniques of systems analysis and design for producing logical methodologies for dealing with complexity in the development of information systems. The course approaches the development of information systems from a problem-solving perspective

<b>2 - Course components (total contact hours per semester):</b>			
Lecture:	Tutorial:	Practical/Fieldwork/Internship	Other
3	1	0	

<b>3 - Additional private study/learning hours expected for students per week. (This should be an average for the semester not a specific requirement in each week):</b>

<b>4 - Development of Learning Outcomes in Domains of Learning</b>
For each of the domains of learning shown below indicate:
- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.
<b>a. Knowledge</b>
<b>(i) Description of the knowledge to be acquired</b>
Introduction to systems Analysis & Design
Introduction to Object-Oriented Systems Analysis and Design with the UML v 2.0
Project Initiation
Review and first exam
Project Management
Requirements Determination
Functional Modeling
Structural Modeling
Review and Midterm exam
Case Study

**4 - Development of Learning Outcomes in Domains of Learning**

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.

**a. Knowledge****(ii) Teaching strategies to be used to develop that knowledge****Lectures**

Instructor will teach the topics of the course emphasizing on the course related learning objectives through three fifty minutes lecture meetings per week. Lectures will, in most cases, have a mix of formal lecturing and active learning.

**Labs**

During the tutorials (one 80 minutes meeting per week), the instructor will solve example problems related to the recently introduced topic. The instructor will also discuss with the students the problems they faced while trying to solve the assigned homework problems. Some of the tutorials are devoted for training the students on software packages and tools needed in the course.

**Projects**

A number of projects are assigned throughout the semester. The projects involve topics that require the use of provided software tools, simulation experiments, and the implementation of theoretically studied issues. Students are grouped in teams, each of 4 students. Each team should submit report and give a presentation of their work

**(iii) Methods of assessment of knowledge acquired**

1	Final Exam
2	Midterm Exam 1
3	Midterm Exam 2
4	Quizzes & Assignments
5	Lab Project

**b. Cognitive Skills****(i) Cognitive skills to be developed****(ii) Teaching strategies to be used to develop these cognitive skills.****(iii) Methodes of assessment of student's cognitive skills.**



**c. Interpersonal Skills and Responsibility**

**(i) Description of the interpersonal skills and capacity to carry responsibility to be developed.**

**(ii) Teaching strategies to be used to develop these skills and abilities**

**(iii) Methods of assessment of student's interpersonal skills and capacity to carry responsibility**

**d. Communication, Information Technology and Numerical Skills.**

**(i) Description of the skills to be developed in this domain.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's numerical and communication skills.**

**e. Psychomotor Skills (if applicable)**

**(i) Description of the psychomotor skills to be developed and level of performance required.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's psychomotor skills.**

## 5 - Schedule of Assessment Tasks for Students During the Semester

Assessment	Assessment task (eg. essay, test, group project, examination, etc)	Week due	Proportion of final Assessment
1	Final Exam		30
2	Midterm Exam 1		20
3	Midterm Exam 2		20
4	Quizzes & Assignments		10
5	Lab Project		20

## D. Student Support

**1 - Arrangements for availability of faculty for individual student consultations and academic advice. (include amount of time faculty are available each week)**

## E. Learning Resources

<b>1 - Required Text(s).</b> Hoffer , Joey F. George , Joseph S. Valacich, "Modern Systems Analysis and Design (World Student)", Prentice Hall; 4 edition (17 May 2004) ISBN-13 9780131454613 ISBN-10 0131454617
<b>2 - Essential References</b> Hoffer , Joey F. George , Joseph S. Valacich, "Modern Systems Analysis and Design (World Student)", Prentice Hall; 4 edition (17 May 2004) ISBN-13 9780131454613 ISBN-10 0131454617
<b>3 - Recommended Books and Reference Material (Journals, Reports, ets) (Attach List)</b>
<b>4 - Electronic Materials, Web Sites etc.</b>
<b>5 - Other Learning material such as computer-based programs/CD, professional standards/regulations</b>

## F. Facilities Required

<b>Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)</b>
<b>1. Accommodation (Lecture rooms, laboratories, etc.)</b>
<b>2. Computing resources</b>
<b>3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)</b>

## **G . Course Evaluation and Improvement Processes**

<b>1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching</b>
<b>2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department</b>
<b>3 Processes for Improvement of Teaching</b>
<b>4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)</b>
<b>5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.</b>

# Course Specification

Institution	King Abdulaziz University
College / Department	Faculty of Computing and Information Technology / Information Technology

## A - Course Identification and General Information

<b>1 - Course Title and code:</b>	Software Engineering (I) / CPIT-251
<b>2 - Credit hours:</b>	3
<b>3 - Program in which the course is offered:</b>	B.S.Information Technology
<b>4 - Name of Faculty member responsible for the course</b>	Mr. Nada Muhammad Almani
<b>5 - Level/year at which this course is offered</b>	Sophomore - 200
<b>6 - Co-requisites for this course (if any)</b>	
<b>7 - Pre-requisites for this course (if any)</b>	CPIT-250
<b>8 - Location if not offered in main campus</b>	Boys - Sulimania , Girls - Sulimania , Girls - Faisalia , Boys - North Jeddah , Girls - North Jeddah

## B - Objectives

<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>	
1	Describe the need for and importance of software engineering and its objectives.
2	Differentiate between the various activities involved in software engineering process.
3	Discover how to develop software as part of a software team.
4	Differentiate between different stages of requirements engineering process.
5	Rewrite the requirements in the form of functional and non-functional requirements to be place in the requirements specification document.
6	Discuss the role played by documentation and formal specifications in developing a system, and the properties they must have. Associate with IEEE standard.
7	Design software applications and formulate model representation utilizing the Unified Modeling Language (UML), based on given requirements.
8	Create use case diagram to model the functional requirement.
9	Design class diagram from a given scenario.
10	Formulate a scenario for a use case and then create the interaction diagrams for this use case.
11	Model state chart diagram for a certain class.
12	Discuss the properties of software architecture and some design patterns.
13	Decide with architecture is suitable for a given non-functional requirements.
14	Distinguish between different distributed application architecture models.

<b>1 - Summary of the main learning outcomes for students enrolled in the course</b>	
15	Contrast between two tier and three tier client server architecture
16	List the different characteristics of software as a service.
17	Illustrating the reuse-driven software engineering.
18	Discover the important rules to create user interface forms then evaluate some cases.
19	List the basic concepts involved in conducting software tests.
<b>2 - Briefly describe any plans for developing and improving the course that are being implemented.</b>	

**C - Course Description** ( Note: General description in the form to be used for the Bulletin or Handbook should be attached)

<b>1 - Topics to be Covered:</b>
This course is intended to teach software engineering principles and techniques used in the specification, design, and testing software systems. Major software development methodologies are reviewed including requirements, analysis and specification, design; testing; documentation.

<b>2 - Course components (total contact hours per semester):</b>			
Lecture:	Tutorial:	Practical/Fieldwork/Internship	Other
3	1	0	

<b>3 - Additional private study/learning hours expected for students per week. (This should be an average for the semester not a specific requirement in each week):</b>

<b>4 - Development of Learning Outcomes in Domains of Learning</b>	
For each of the domains of learning shown below indicate:	
- A brief summary of the knowledge or skill the course is intended to develop;	
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;	
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.	
<b>a. Knowledge</b>	
<b>(i) Description of the knowledge to be acquired</b>	
Introduction to software engineering	
Requirement Engineering	
Requirement Gathering	
Design and Implementation	
Modelling Functional Requirements for the system	
Modelling Dynamic Aspects of the system	
Architetur Design	
Distributed System Architecture	
Software Reuse	
User Interface Design	
<b>(ii) Teaching strategies to be used to develop that knowledge</b>	
<b>(iii) Methods of assessment of knowledge acquired</b>	
1	Final Exam
2	Midterm Exam
3	Quiz
4	Project Report
5	Discussion
6	Presentation

**4 - Development of Learning Outcomes in Domains of Learning**

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.

**a. Knowledge****(iii) Methods of assessment of knowledge acquired**

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[Homeworks](#)**b. Cognitive Skills****(i) Cognitive skills to be developed****(ii) Teaching strategies to be used to develop these cognitive skills.****(iii) Methodes of assessment of student's cognitive skills.****c. Interpersonal Skills and Responsibility****(i) Description of the interpersonal skills and capacity to carry responsibility to be developed.****(ii) Teaching strategies to be used to develop these skills and abilities****(iii) Methods of assessment of student's interpersonal skills and capacity to carry responsibility**

**d. Communication, Information Technology and Numerical Skills.**

**(i) Description of the skills to be developed in this domain.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's numerical and communication skills.**

**e. Psychomotor Skills (if applicable)**

**(i) Description of the psychomotor skills to be developed and level of performance required.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's psychomotor skills.**

**5 - Schedule of Assessment Tasks for Students During the Semester**

Assessment	Assessment task (eg. essay, test, group project, examination, etc)	Week due	Proportion of final Assessment
1	Final Exam		
2	Midterm Exam		
3	Quiz		
4	Project Report		
5	Discussion		
6	Presentation		
7	Homeworks		

## D. Student Support

**1 - Arrangements for availability of faculty for individual student consultations and academic advice. (include amount of time faculty are available each week)**

## E. Learning Resources

### 1 - Required Text(s).

Sommerville, "Software Engineering", Addison Wesley; 7 edition (3 Jun 2004)  
ISBN-13 9780321210265 ISBN-10 0321210263

### 2 - Essential References

Sommerville, "Software Engineering", Addison Wesley; 7 edition (3 Jun 2004)  
ISBN-13 9780321210265 ISBN-10 0321210263

### 3 - Recommended Books and Reference Material (Journals, Reports, ets) (Attach List)

### 4 - Electronic Materials, Web Sites etc.

### 5 - Other Learning material such as computer-based programs/CD, professional standards/regulations

## F. Facilities Required

**Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)**

**1. Accommodation (Lecture rooms, laboratories, etc.)**

**2. Computing resources**

**3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)**

## G . Course Evaluation and Improvement Processes

**1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching**

**2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department**

**3 Processes for Improvement of Teaching**

**4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)**

**5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.**



# Course Specification

Institution	King Abdulaziz University
College / Department	Faculty of Computing and Information Technology / Information Technology

## A - Course Identification and General Information

<b>1 - Course Title and code:</b>	Software Design Patterns / CPIT-252
<b>2 - Credit hours:</b>	3
<b>3 - Program in which the course is offered:</b>	B.S.Information Technology
<b>4 - Name of Faculty member responsible for the course</b>	Mr. Muhammad Ghazi Alobaid Allah
<b>5 - Level/year at which this course is offered</b>	Sophomore - 200
<b>6 - Co-requisites for this course (if any)</b>	
<b>7 - Pre-requisites for this course (if any)</b>	CPIT-251
<b>8 - Location if not offered in main campus</b>	Boys - Sulimania , Girls - Sulimania , Girls - Faisalia , Boys - North Jeddah , Girls - North Jeddah

## B - Objectives

<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>
1 Define software architecture, requirements document and architectural view.
2 Describe the influences that affect the building of software architecture.
3 List the activities to build software architecture.
4 Distinguish between process recommendations and structural recommendations to select good software architecture
5 Compare between architectural reference, architectural pattern, and reference model.
6 State why the software architecture is important and why it is represents a basis to build software.
7 Distinguish between architectural view and architectural structure
8 Describe the types of software architecture structures.
9 Illustrate the relationship between functionality, software quality attributes, and software architecture.
10 List the parts of software quality attribute scenarios.
11 Illustrate some examples on software quality attribute scenarios (availability scenarios, modifiability scenarios, performance scenarios, security scenarios, and usability scenarios).
12 Define tactic, strategy, availability, local and non- local changes, usability, and testability.
13 Describe how to achieve software quality attributes using software tactics.
14 Illustrate the availability tactics, modifiability tactics, performance tactics, security tactics, and usability tactics that are being used to control the response of software quality attributes.

<b>1 - Summary of the main learning outcomes for students enrolled in the course</b>	
15	Distinguish between different types of modules dependences.
16	Apply relationship of tactics to architectural pattern.
17	Demonstrate the uses of architectural documentation.
18	Illustrate the choosing of relevant views, documenting views, documenting behavior, and documenting interface.
19	List the seven parts of a documented view.
20	Use a template to document the architectural interface.
21	Apply Unified modeling language to document software architecture.
<b>2 - Briefly describe any plans for developing and improving the course that are being implemented.</b>	

**C - Course Description** ( Note: General description in the form to be used for the Bulletin or Handbook should be attached)

<b>1 - Topics to be Covered:</b>
<p>“Software Design Pattern” is designed to help the students understanding the principles behind the patterns of software and to applying a number of basic patterns.</p> <p>This course covers fundamental aspects of large scale software architecture, and also defined frameworks, design patterns and ways of developing and establishing systems based on components.</p> <p>The purpose of this course is:</p> <p>(1) To know the classical styles of software pattern and the need for a language to describe the architecture,</p> <p>(2) To understand how to express the qualities we want our architecture to provide to the system or systems we are building from it,</p> <p>(3) To know how to achieve software qualities using TACTICS.</p> <p>Topics include: Envisioning Architecture (architecture business cycle), Architectural Patterns, Reference Models, and Reference Architectures, Understanding Quality Attributes, Achieving Qualities using tactics, and how to document software architecture.</p>

<b>2 - Course components (total contact hours per semester):</b>			
Lecture:	Tutorial:	Practical/Fieldwork/Internship	Other
3	1	0	

<b>3 - Additional private study/learning hours expected for students per week. (This should be an average for the semester not a specific requirement in each week):</b>

<b>4 - Development of Learning Outcomes in Domains of Learning</b>
<p>For each of the domains of learning shown below indicate:</p> <ul style="list-style-type: none"> <li>- A brief summary of the knowledge or skill the course is intended to develop;</li> <li>- A description of the teaching strategies to be used in the course to develop that knowledge or skill;</li> <li>- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.</li> </ul>
<b>a. Knowledge</b>
<p><b>(i) Description of the knowledge to be acquired</b></p> <p>The Architecture Business Cycle</p> <p>What is Software Architecture</p> <p>Understanding Quality Attributes</p> <p>Achieving Qualities</p> <p>Documenting Software Architectures</p>

**4 - Development of Learning Outcomes in Domains of Learning**

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.

**a. Knowledge****(ii) Teaching strategies to be used to develop that knowledge****Lectures**

Instructor will teach the topics of the course emphasizing on the course related learning objectives through three fifty minutes lecture meetings per week. Lectures will, in most cases, have a mix of formal lecturing and active learning.

**Labs**

During the tutorials (one 80 minutes meeting per week), the instructor will solve example problems related to the recently introduced topic. The instructor will also discuss with the students the problems they faced while trying to solve the assigned homework problems. Some of the tutorials are devoted for training the students on software packages and tools needed in the course.

**Projects**

A number of projects are assigned throughout the semester. The projects involve topics that require the use of provided software tools, simulation experiments, and the implementation of theoretically studied issues. Students are grouped in teams, each of 4 students. Each team should submit report and give a presentation of their work.

**(iii) Methods of assessment of knowledge acquired**

1	Final Exam
2	Midterm Exam 1
3	Midterm Exam 2
4	class work , activity, and assignments
5	Lab Quizzes
6	Activity in the Lab
7	Lab Homework and Assignments

**b. Cognitive Skills****(i) Cognitive skills to be developed****(ii) Teaching strategies to be used to develop these cognitive skills.****(iii) Methodes of assessment of student's cognitive skills.**

**c. Interpersonal Skills and Responsibility**

**(i) Description of the interpersonal skills and capacity to carry responsibility to be developed.**

**(ii) Teaching strategies to be used to develop these skills and abilities**

**(iii) Methods of assessment of student's interpersonal skills and capacity to carry responsibility**

**d. Communication, Information Technology and Numerical Skills.**

**(i) Description of the skills to be developed in this domain.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's numerical and communication skills.**

**e. Psychomotor Skills (if applicable)**

**(i) Description of the psychomotor skills to be developed and level of performance required.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's psychomotor skills.**

## 5 - Schedule of Assessment Tasks for Students During the Semester

Assessment	Assessment task (eg. essay, test, group project, examination, etc)	Week due	Proportion of final Assessment
1	Final Exam		30
2	Midterm Exam 1		20
3	Midterm Exam 2		20
4	class work , activity, and assignments		10
5	Lab Quizzes		5
6	Activity in the Lab		5
7	Lab Homework and Assignments		10

## D. Student Support

**1 - Arrangements for availability of faculty for individual student consultations and academic advice. (include amount of time faculty are available each week)**

## E. Learning Resources

<b>1 - Required Text(s).</b> Bass, P. Clements, R. Kazman, "Software Architecture in Practice", Addison-Wesley, 2nd Edition, 2003 ISBN-13 9780321154958 ISBN-10 0321154959
<b>2 - Essential References</b> Bass, P. Clements, R. Kazman, "Software Architecture in Practice", Addison-Wesley, 2nd Edition, 2003 ISBN-13 9780321154958 ISBN-10 0321154959
<b>3 - Recommended Books and Reference Material (Journals, Reports, ets) (Attach List)</b>
<b>4 - Electronic Materials, Web Sites etc.</b>
<b>5 - Other Learning material such as computer-based programs/CD, professional standards/regulations</b>

## F. Facilities Required

<b>Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)</b>
<b>1. Accommodation (Lecture rooms, laboratories, etc.)</b>
<b>2. Computing resources</b>
<b>3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)</b>

## **G . Course Evaluation and Improvement Processes**

<b>1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching</b>
<b>2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department</b>
<b>3 Processes for Improvement of Teaching</b>
<b>4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)</b>
<b>5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.</b>

# Course Specification

Institution	King Abdulaziz University
College / Department	Faculty of Computing and Information Technology / Information Technology

## A - Course Identification and General Information

<b>1 - Course Title and code:</b>	Operating Systems / CPIT-260
<b>2 - Credit hours:</b>	3
<b>3 - Program in which the course is offered:</b>	B.S.Information Technology
<b>4 - Name of Faculty member responsible for the course</b>	Mr. Lamyaa Fattouh Hasan
<b>5 - Level/year at which this course is offered</b>	Sophomore - 200
<b>6 - Co-requisites for this course (if any)</b>	
<b>7 - Pre-requisites for this course (if any)</b>	CPIT-210 CPCS-204
<b>8 - Location if not offered in main campus</b>	Boys - Sulimania , Girls - Sulimania , Girls - Faisalia , Boys - North Jeddah , Girls - North Jeddah

## B - Objectives

<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>
1 Understand the relationship between the computer system and operating system
2 Understand the mechanism of interrupts and how it is used within a computer system
3 Specify the role of an operating system and its core modules - process management, memory management, I/O systems, protection and security. How these modules interact among themselves and how they interact with the computer system
4 understanding Process and threads
5 Analyze and design CPU scheduling techniques, and document the outcomes in a report
6 Evaluating CPU scheduling techniques,
7 Analyze and design process synchronization techniques, and document the outcomes in a report
8 Analyze and design deadlock techniques, and document the outcomes in a report
9 Analyze and design memory management techniques
10 Analyze and design virtual memory concept
11 Analyze and design page replacement techniques and document the outcomes in a report
12 Understanding and compare File System Interface
13 Understanding and compare File System Implementation
14 Understanding and compare between I/O System implementation
<b>2 - Briefly describe any plans for developing and improving the course that are being implemented.</b>

**C - Course Description** ( Note: General description in the form to be used for the Bulletin or Handbook should be attached)

**1 - Topics to be Covered:**

Topics include: Introduction ,Operating System Structures ,Processes ,Threads, CPU Scheduling ,CPU Scheduling ,Process Synchronization ,Dead Locks

**2 - Course components (total contact hours per semester):**

Lecture:	Tutorial:	Practical/Fieldwork/Internship	Other
3	1	0	

**3 - Additional private study/learning hours expected for students per week. (This should be an average for the semester not a specific requirement in each week):**

**4 - Development of Learning Outcomes in Domains of Learning**

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.

**a. Knowledge**

**(i) Description of the knowledge to be acquired**

Introduction  
Operating System Structures  
Processes  
Threads, CPU Scheduling  
CPU Scheduling  
Process Synchronization  
Dead Locks  
Memory Management  
Virtual Memory  
File-System Interface  
File System Implementation  
I/O Systems



**4 - Development of Learning Outcomes in Domains of Learning**

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.

**a. Knowledge****(ii) Teaching strategies to be used to develop that knowledge****Lectures**

Instructor will teach the topics of the course emphasizing on the course related learning objectives through three fifty minutes lecture meetings per week. Lectures will; in most cases, have a mix of formal lecturing and active learning. The instructor will solve example problems related to the recently introduced topic. The instructor will also discuss with the students the problems they faced while trying to solve the assigned homework problems.

**Assignments**

The instructor will give problems related to the recently introduced topic to the students to solve them in home.

**Lab**

? Implementing the most important parts of the operating system (discussed in the lectures).

? Explaining all the file system, process, threads, memory management issues under the Linux operating system. The Linux commands and shell programming will be demonstrated.

? Understanding what is a SHELL script, why and where it is used.

? Explaining the main aspects of the SHELL programming:

SHELL variables?

Using SHELL script to write if – else, switch, and loops programs?

? Controlling processes

**(iii) Methods of assessment of knowledge acquired**

1	Final Exam
2	Midterm Exam 1
3	Midterm Exam 2
4	Lab

**b. Cognitive Skills****(i) Cognitive skills to be developed****(ii) Teaching strategies to be used to develop these cognitive skills.****(iii) Methodes of assessment of student's cognitive skills.**

**c. Interpersonal Skills and Responsibility**

**(i) Description of the interpersonal skills and capacity to carry responsibility to be developed.**

**(ii) Teaching strategies to be used to develop these skills and abilities**

**(iii) Methods of assessment of student's interpersonal skills and capacity to carry responsibility**

**d. Communication, Information Technology and Numerical Skills.**

**(i) Description of the skills to be developed in this domain.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's numerical and communication skills.**

**e. Psychomotor Skills (if applicable)**

**(i) Description of the psychomotor skills to be developed and level of performance required.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's psychomotor skills.**

## 5 - Schedule of Assessment Tasks for Students During the Semester

Assessment	Assessment task (eg. essay, test, group project, examination, etc)	Week due	Proportion of final Assessment
1	Final Exam		40
2	Midterm Exam 1		25
3	Midterm Exam 2		25
4	Lab		10

## D. Student Support

**1 - Arrangements for availability of faculty for individual student consultations and academic advice. (include amount of time faculty are available each week)**

## E. Learning Resources

<b>1 - Required Text(s).</b> Silberschatz, Peter Baer Galvin, Greg Gagne, "Operating System Concepts", John Wiley and Sons Inc, 7th Edition, 2004 ISBN-13 9780471694663 ISBN-10 0471694665
<b>2 - Essential References</b> Silberschatz, Peter Baer Galvin, Greg Gagne, "Operating System Concepts", John Wiley and Sons Inc, 7th Edition, 2004 ISBN-13 9780471694663 ISBN-10 0471694665
<b>3 - Recommended Books and Reference Material (Journals, Reports, ets) (Attach List)</b>
<b>4 - Electronic Materials, Web Sites etc.</b>
<b>5 - Other Learning material such as computer-based programs/CD, professional standards/regulations</b>

## F. Facilities Required

<b>Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)</b>
<b>1. Accommodation (Lecture rooms, laboratories, etc.)</b>
<b>2. Computing resources</b>
<b>3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)</b>

## **G . Course Evaluation and Improvement Processes**

<b>1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching</b>
<b>2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department</b>
<b>3 Processes for Improvement of Teaching</b>
<b>4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)</b>
<b>5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.</b>

# Course Specification

Institution	King Abdulaziz University
College / Department	Faculty of Computing and Information Technology / Information Technology

## A - Course Identification and General Information

<b>1 - Course Title and code:</b>	Human-Computer Interaction / CPIT-280
<b>2 - Credit hours:</b>	3
<b>3 - Program in which the course is offered:</b>	B.S.Information Technology
<b>4 - Name of Faculty member responsible for the course</b>	Mr. Muhammad Ishaq
<b>5 - Level/year at which this course is offered</b>	Sophomore - 200
<b>6 - Co-requisites for this course (if any)</b>	
<b>7 - Pre-requisites for this course (if any)</b>	CPIT-250
<b>8 - Location if not offered in main campus</b>	Boys - Sulimania , Girls - Sulimania , Girls - Faisalia , Boys - North Jeddah , Girls - North Jeddah

## B - Objectives

<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>
1 Define Human Computer Interaction and give examples of Human Computer interaction
2 Identify the impact of human memory on interface design.
3 Identify human behavior in comparision with computers
4 Recognize how computers and associated input –output devices influences the nature of interaction and style of the interface
5 Explain how computer and humans interacts
6 Develop an interaction framework model for a specific goal
7 Use different data gathering methods used in designing interactive systems
8 Differentiate between several data gathering Tools.
9 Convert data into requirements for an interactive system
10 construct prototypes of interactive systems
11 Differentiate between several prototyping Tools.
12 Differentiate between design rules, design standards, and design guidelines.
13 Design interactive systems
14 Apply design rules to enhance the interactive properties of the system
15 Distinguish between good and bad designs
16 Describe programming tools for interactive systems

<b>1 - Summary of the main learning outcomes for students enrolled in the course</b>	
17	State Software engineering and the design process for interactive systems
18	Translate abstract designs and usability principles into an executable form.
19	Evaluate interactive systems using qualitative as well as quantitative measures
20	Describe Ubiquitous computing and augmented realities
<b>2 - Briefly describe any plans for developing and improving the course that are being implemented.</b>	

**C - Course Description** ( Note: General description in the form to be used for the Bulletin or Handbook should be attached)

<b>1 - Topics to be Covered:</b>
<p>Human Computer Interaction course is intended to develop the student’s ability to understand the basic principles of human computer and interaction and to design interactive systems.</p> <p>This course helps in distinguishing between good and bad designs. Design and construct prototypes of interactive systems, it also helps to use design rules to enhance the interactive properties of the system. HCI is very useful in evaluating interactive systems using qualitative as well as quantitative measures.</p>

<b>2 - Course components (total contact hours per semester):</b>			
Lecture:	Tutorial:	Practical/Fieldwork/Internship	Other
3	1	0	

<b>3 - Additional private study/learning hours expected for students per week. (This should be an average for the semester not a specific requirement in each week):</b>

<b>4 - Development of Learning Outcomes in Domains of Learning</b>
<p>For each of the domains of learning shown below indicate:</p> <ul style="list-style-type: none"> <li>- A brief summary of the knowledge or skill the course is intended to develop;</li> <li>- A description of the teaching strategies to be used in the course to develop that knowledge or skill;</li> <li>- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.</li> </ul>
<b>a. Knowledge</b>
<p><b>(i) Description of the knowledge to be acquired</b></p> <p>INTRODUCTION TO HUMAN COMPUTER INTERACTION  FOUNDATION OF HCI-THE HUMAN  FOUNDATION OF HCI-THE COMPUTER  FOUNDATION OF HCI-THE INTERACTION  DATA GATHERING, IDENTIFYING NEEDS AND ESTABLISHING REQUIREMENTS  INTERACTION DESIGN BASICS  DESIGN, PROTOTYPING AND CONSTRUCTION  USER INTERFACE EVALUATION</p>

#### 4 - Development of Learning Outcomes in Domains of Learning

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.

##### a. Knowledge

##### (ii) Teaching strategies to be used to develop that knowledge

###### Lectures

Instructor will teach the topics of the course emphasizing on related course learning outcomes (CLOs), while student will take notes and read the text book.

At the end of each week, students will have to submit a Lecture Diary related to the topics covered in that week. These Lecture diaries are a sort of feedback from the student to know the difficulties they are facing and a way to enhance the method of delivery of the Lectures.

Students will take two exams (Excluding the Final exam) at a pre-announced time. Each exam will be discussed in class to highlight on the common mistakes that have been appeared in the answer sheets. At the end of each Exam, The Student will be informed of the correct answers by posting the answer key on fcit.kau.edu.sa website.

At the end of the semester there will be one major final exam that would cover all the main topics of the course.

###### Labs

During the Labs session, Exercise Questions from the book, Case Studies, Home Works and Some problems will be given to the students related to the Topics covered in a particular Week.

Students will be divided into teams; each team will present the solution of some homework problem. Instructor will guide the students during the Labs session.

Students will be exposed to the practicalities in different up-to-date Information technologies. Students will learn by doing in the Labs.

###### ATTENDANCE and class participation

? Your regular attendance will enhance your final grades.

? When your absence exceeds the 25 % limit (~ 10 sessions), a report will be send to the Academic Affairs to take the necessary action. As a result, you may get DN or AF in the course.

#### 4 - Development of Learning Outcomes in Domains of Learning

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.

##### a. Knowledge

##### (ii) Teaching strategies to be used to develop that knowledge

###### Lecture Diaries

Objective:

the diary will improve on the student's reporting skills and provide a channel where a student can communicate his impressions and thoughts on what is discussed in the class room.

How long is a diary?

The diary is a mini report (between 120 to 150 words)

How to submit a diary?

The diary is submitted electronically by email. Student must write in the title of the email the following information on the following format:

LD#?\_Topic Number\_Student Name\_Student Number\_student section

Example:

LD#6\_12,13\_Ahmed Ali\_090980\_C3

The text of the diary is typed in the body of the email (NOT AS A FILE ATTACHMENT!)

When do I have to submit a diary?

The deadline for weekly diary is on Friday 12:00 am of every week (sharp deadline) i.e Before Jumma Prayers.

What is written in the diary?

Student must consider following points while writing his diary:

? What have I learned in this week's lectures?

? What is my opinion on what was presented?

? What did I like about this week's lectures? and why?

? What was difficult to understand? and why?

? What am I going to do to understand the difficult points?

? A student must focus on the highlights and important points raised in the weekly lectures to pick up the topic of his diary.

Student can choose to answer all or some of the above questions. A good diary will mainly answer question 2, 3, 4 and 5. A bad diary will answer only question 1.

###### Quizzes

There will be three Quizzes before selected classes. These Quizzes have no weight in the overall assessment, However it does contribute to revise the material covered.

##### (iii) Methods of assessment of knowledge acquired

1	Final Exam
2	First Exam
3	Midterm Exam
4	Lab Test
5	Attendance and Class participation
6	Lecture Diaries



**b. Cognitive Skills**

**(i) Cognitive skills to be developed**

**(ii) Teaching strategies to be used to develop these cognitive skills.**

**(iii) Methodes of assessment of student's cognitive skills.**

**c. Interpersonal Skills and Responsibility**

**(i) Description of the interpersonal skills and capacity to carry responsibility to be developed.**

**(ii) Teaching strategies to be used to develop these skills and abilities**

**(iii) Methods of assessment of student's interpersonal skills and capacity to carry responsibility**

**d. Communication, Information Technology and Numerical Skills.**

**(i) Description of the skills to be developed in this domain.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's numerical and communication skills.**

**e. Psychomotor Skills (if applicable)**

**(i) Description of the psychomotor skills to be developed and level of performance required.**

(ii) Methods of assessment of student development of skills.

#### 5 - Schedule of Assessment Tasks for Students During the Semester

Assessment	Assessment task (eg. essay, test, group project, examination, etc)	Week due	Proportion of final Assessment
1	Final Exam		40
2	First Exam		15
3	Midterm Exam		15
4	Lab Test		20
5	Attendance and Class participation		5
6	Lecture Diaries		5

#### D. Student Support

1 - Arrangements for availability of faculty for individual student consultations and academic advice. (include amount of time faculty are available each week)

#### E. Learning Resources

##### 1 - Required Text(s).

Dix, J. Finlay, G. D. Abowd, R. Beale, "Human-Computer Interaction", Prentice Hall, 3rd Edition, 2003  
ISBN-13 9780130461094 ISBN-10 0130461091

##### 2 - Essential References

Dix, J. Finlay, G. D. Abowd, R. Beale, "Human-Computer Interaction", Prentice Hall, 3rd Edition, 2003  
ISBN-13 9780130461094 ISBN-10 0130461091

##### 3 - Recommended Books and Reference Material (Journals, Reports, ets) (Attach List)

##### 4 - Electronic Materials, Web Sites etc.

##### 5 - Other Learning material such as computer-based programs/CD, professional standards/regulations

## **F. Facilities Required**

Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)

**1. Accommodation (Lecture rooms, laboratories, etc.)**

**2. Computing resources**

**3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)**

## **G . Course Evaluation and Improvement Processes**

**1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching**

**2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department**

**3 Processes for Improvement of Teaching**

**4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)**

**5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.**

# Course Specification

Institution	King Abdulaziz University
College / Department	Faculty of Computing and Information Technology / Information Technology

## A - Course Identification and General Information

<b>1 - Course Title and code:</b>	Computer Graphics / CPIT-285
<b>2 - Credit hours:</b>	3
<b>3 - Program in which the course is offered:</b>	B.S.Information Technology
<b>4 - Name of Faculty member responsible for the course</b>	Prof. Alhasanain Muhammad Albarhamtoushi
<b>5 - Level/year at which this course is offered</b>	Sophomore - 200
<b>6 - Co-requisites for this course (if any)</b>	
<b>7 - Pre-requisites for this course (if any)</b>	CPCS-204
<b>8 - Location if not offered in main campus</b>	Boys - Sulimania , Girls - Sulimania , Girls - Faisalia , Boys - North Jeddah , Girls - North Jeddah

## B - Objectives

<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>
1 Understand the basic objectives and scope of computer graphics.
2 Identify computer graphics applications common graphics APIs.
3 Understand the basic structures of 2D and 3D graphics systems.
4 Apply the roles of Java language and the Java 2D and Java 3D packages.
5 Identify fields related to computer graphics.
6 Understand the architecture and operations of a 2D graphics system.
7 Describe 2D coordinate systems and equations of graphs.
8 Apply Java 2D program structure and the Graphics2D object.
9 Apply graph equations with Java programs.
10 Use basic 2D geometric primitives and construct custom shapes.
11 Understand color spaces and use the Java Color class.
12 Apply stroke types.
13 Construct transforms including translation, rotation, scaling, shearing, and reflection.
14 Combine basic transformations to form more complex ones.
15 Apply fonts and font metrics and understand glyph, ligature, and derived font.
16 Draw curves and construct custom shape primitives.

<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>	
17	Apply basic image-processing techniques.
18	Create 2D animation and compose Animated Graph.
19	Perform graphics printing.
20	Describe the 3D rendering process and present an overview of Java 3D programs.
21	Define the Java 3D scene graph and Classify components of a scene graph.
22	Apply background nodes and understand and apply bounds.
23	Make changes in live scene graphs.
24	Describe the representations of points and vectors.
25	Apply the GeometryArray and GeometryInfo of classes for constructing geometry.
26	Use the Appearance class and the associated node-component classes.
27	Construct 3D transforms including translation, rotation, scaling, shearing, and reflection.
28	Apply transformation matrices in scene graphs.
29	Construct and apply composite transformations.
30	Apply transforms in constructing geometries.
31	Present the concept of view in the 3D rendering process.
32	Identify the parallel and perspective projections.
33	Specify the viewing and projection matrices.
34	Apply the Java 3D standard view model and compatibility-mode view model.
35	Understand head tracking in view models.
36	Apply input devices, sensors, and head tracking in Java 3D.
<b>2 - Briefly describe any plans for developing and improving the course that are being implemented.</b>	

**C - Course Description** ( Note: General description in the form to be used for the Bulletin or Handbook should be attached)

<b>1 - Topics to be Covered:</b>
<p>Display computers Systems: vector and pixel displaying system. Basic computer graphics techniques. Graphical software. The use of API(s) for computer graphics. Color models, coordinates homogeneous, transformation, rotation, and clipping. Drawing lines, curves, and surfaces Algorithms. Representation of objects through polygons. Computer graphical user interfaces Design (GUI). This Java based graphics text introduces advanced graphic features to a student audience mostly trained in the Java language. Its accessible approach and in-depth coverage features the high-level Java 2D and Java 3D APIs-offering an elegant and easy-to-understand presentation of 2D and 3D graphics without compromising the fundamentals of the subject.</p>

<b>2 - Course components (total contact hours per semester):</b>			
Lecture:	Tutorial:	Practical/Fieldwork/Internship	Other
3	1	0	

<b>3 - Additional private study/learning hours expected for students per week. (This should be an average for the semester not a specific requirement in each week):</b>

<b>4 - Development of Learning Outcomes in Domains of Learning</b>
For each of the domains of learning shown below indicate:
<ul style="list-style-type: none"> <li>- A brief summary of the knowledge or skill the course is intended to develop;</li> <li>- Adescription of the teaching strategies to be used in the curse to develop that knowledge or skill;</li> <li>- The methods of students assessment to be used in the course to evalute learning outcomes in the domain concerned.</li> </ul>
<b>a. Knowledge</b>
<b>(i) Description of the knowledge to be acquired</b>

#### 4 - Development of Learning Outcomes in Domains of Learning

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.

##### a. Knowledge

Overview of Computer Graphics

2D Graphics: Basics

2D Graphics: Rendering Details

2D Graphics: Advanced Topics

Basic 3D Graphics

Graphics Contents

Geometric Transformation

Views

##### (ii) Teaching strategies to be used to develop that knowledge

###### Lectures

Instructor will teach the topics of the course emphasizing on the course related learning objectives through three fifty minutes lecture (or two 80 minutes lecture) meetings per week. Lectures will, in most cases, have a mix of formal lecturing and active learning.

###### Tutorials

During the tutorials (one 80 minutes meeting per week), the instructor will solve example problems related to the recently introduced topic. The instructor will also discuss with the students the problems they faced while trying to solve the assigned homework problems. Some of the tutorials are devoted for training the students on software packages, Java language and tools needed in the course.

###### Projects

A number of projects are assigned throughout the semester. The projects involve topics that require the use of provided Java compiler, software tools, and the implementation of theoretically studied issues. Students are grouped in teams, each of 4 students. Each team should submit report and give a presentation of their work.

##### (iii) Methods of assessment of knowledge acquired

1	Final Exam
2	Midterm Exam 1
3	Midterm Exam 2
4	Project Document
5	Project Presentation
6	Project Discussion
7	Lab

##### b. Cognitive Skills

##### (i) Cognitive skills to be developed

##### (ii) Teaching strategies to be used to develop these cognitive skills.

##### (iii) Methodes of assessment of student's cognitive skills.

**c. Interpersonal Skills and Responsibility**

**(i) Description of the interpersonal skills and capacity to carry responsibility to be developed.**

**(ii) Teaching strategies to be used to develop these skills and abilities**

**(iii) Methods of assessment of student's interpersonal skills and capacity to carry responsibility**

**d. Communication, Information Technology and Numerical Skills.**

**(i) Description of the skills to be developed in this domain.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's numerical and communication skills.**

**e. Psychomotor Skills (if applicable)**

**(i) Description of the psychomotor skills to be developed and level of performance required.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's psychomotor skills.**

## 5 - Schedule of Assessment Tasks for Students During the Semester

Assessment	Assessment task (eg. essay, test, group project, examination, etc)	Week due	Proportion of final Assessment
1	Final Exam		20
2	Midterm Exam 1		20
3	Midterm Exam 2		20
4	Project Document		5
5	Project Presentation		7.5
6	Project Discussion		7.5
7	Lab		20

## D. Student Support

**1 - Arrangements for availability of faculty for individual student consultations and academic advice. (include amount of time faculty are available each week)**

## E. Learning Resources

<b>1 - Required Text(s).</b> Hearn D., M. P. Baker, "Computer Graphics with OpenGL", Prentice Hall, 3rd Edition, 2003 ISBN-13 9780130153906 ISBN-10 0130153907
<b>2 - Essential References</b> Hearn D., M. P. Baker, "Computer Graphics with OpenGL", Prentice Hall, 3rd Edition, 2003 ISBN-13 9780130153906 ISBN-10 0130153907
<b>3 - Recommended Books and Reference Material (Journals, Reports, ets) (Attach List)</b>
<b>4 - Electronic Materials, Web Sites etc.</b>
<b>5 - Other Learning material such as computer-based programs/CD, professional standards/regulations</b>

## F. Facilities Required

<b>Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)</b>
<b>1. Accommodation (Lecture rooms, laboratories, etc.)</b>
<b>2. Computing resources</b>
<b>3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)</b>



## **G . Course Evaluation and Improvement Processes**

<b>1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching</b>
<b>2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department</b>
<b>3 Processes for Improvement of Teaching</b>
<b>4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)</b>
<b>5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.</b>

# Course Specification

Institution	King Abdulaziz University
College / Department	Faculty of Computing and Information Technology / Information Technology

## A - Course Identification and General Information

<b>1 - Course Title and code:</b>
IT Issues and Management / CPIT-330
<b>2 - Credit hours:</b>
3
<b>3 - Program in which the course is offered:</b>
B.S.Information Technology
<b>4 - Name of Faculty member responsible for the course</b>
Prof. Amro Abdulaziz Sharaf
<b>5 - Level/year at which this course is offered</b>
Junior - 300
<b>6 - Co-requisites for this course (if any)</b>
<b>7 - Pre-requisites for this course (if any)</b>
CPIT-220 CPIT-250
<b>8 - Location if not offered in main campus</b>
Boys - Sulimania , Girls - Sulimania , Girls - Faisalia , Boys - North Jeddah , Girls - North Jeddah

## B - Objectives

<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>
1 Plan, manage and close a software development project in reduced time using Agile practices.
2 Apply agile principle to Minimize uncertainty and risk through the Scrum method.
3 Conclude the project delivers required functionality and adds value to the business.
4 Create an environment of self-management for your software development team
5 Assess and optimize the team's responsiveness to change, through accelerated on-the-job learning.
6 Organize agile practices for large projects and integrate them into the wider organization.
<b>2 - Briefly describe any plans for developing and improving the course that are being implemented.</b>

**C - Course Description** ( Note: General description in the form to be used for the Bulletin or Handbook should be attached)

**1 - Topics to be Covered:**

Traditional software development can be a cumbersome process, dominated by uncertainty and risk. Agile and Scrum methods address this problem by promoting open collaboration and adaptability throughout the project life cycle. These methods focus on developing value-added software in short amount of time. In this course, you learn how to apply Agile and Scrum techniques to manage software development projects.

Topics Include: Introduction to Agile Project Management, Fundamentals of Scrum for Dealing with Uncertainty and Risk, Identifying the roles and their responsibilities, Managing releases, Tools for tracking and monitoring a project, Planning an Agile Project, Establishing the business reasons for the project, Clarifying the business vision, Identifying features for development in an iteration, Fostering Self-Management within the Development Team, Creating the optimal working environment, Transitioning to self-management, Running iterations, Managing Change, Reviewing the iteration through a Sprint Review, Closing the project using a Sprint Retrospective, Applying Agile throughout Your Organization, Dealing with the legacy organization, Scaling for large projects

**2 - Course components (total contact hours per semester):**

Lecture:	Tutorial:	Practical/Fieldwork/Internship	Other
3	1	0	

**3 - Additional private study/learning hours expected for students per week. (This should be an average for the semester not a specific requirement in each week):**

**4 - Development of Learning Outcomes in Domains of Learning**

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.

**a. Knowledge**

**(i) Description of the knowledge to be acquired**

Introduction to Agile Project Management  
Fundamentals of Scrum for Dealing with Uncertainty and Risk and Identifying the roles and their responsibilities  
Managing releases and Tools for tracking and monitoring a project  
Planning an Agile Project and establishing the business reasons for the project  
Clarifying the business vision and Identifying features for development in an iteration  
Fostering Self-Management within the Development Team and Creating the optimal working environment  
Transitioning to self-management  
Running iterations  
Managing Change  
Reviewing the iteration through a Sprint Review  
Closing the project using a Sprint Retrospective  
Applying Agile throughout Your Organization  
Dealing with the legacy organization  
Scaling for large projects

#### 4 - Development of Learning Outcomes in Domains of Learning

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.

##### a. Knowledge

###### (ii) Teaching strategies to be used to develop that knowledge

###### Lectures and Recitations

The course materials will be taught through a series of lectures and recitations. Lecture time will be used for teaching course materials and class discussion.

Recitations will be used to support and enhance the material covered in the lectures through a practical application. Specifically, recitations will provide any necessary background materials, discuss examples, and answer questions regarding the application of theory to practice. Please note that attendance to recitations is required.

###### Homework

All homework will be distributed and submitted electronically. The grade of the course will be assigned on an individual and team basis. For the term project, the work is done by a set of students working together as a company. The team grade of the term project is obtained from the term project documents. From the term project grade, each member will get an individual term project grade depending on her efforts and contributions as evaluated by her peers in the group. Each individual will receive a grade equal to the term project grade times a multiplier. This multiplier can be lower or greater than one. The average of the individual grades will be equal to the team grade. In that case, working effectively in a team is a precondition to get a good grade, but in the case that circumstances on the team create a difficult environment, individuals will not be blamed for the fault of others. Problem sets that are prepared by a team will also be graded accordingly. The term project, problem sets and class participation account for 100% of the grade.

###### Class Policy

Assignments, problem sets and term projects performed by students for submission serve the following two purposes:

- Assignments, problem sets and term projects are seen as educational devices to help students master the course material. This includes the concepts, theories, methodologies, and tools presented in class and recitation as well as such skills as working in teams.
- Assignments, problem sets and term projects help the faculty evaluate how well each student has mastered the course material. Collaboration among students on problem sets or term project phases to be completed individually is limited to discussing concepts and clarifying issues. Nonetheless, each student is expected to produce her own solutions to the homework problems.

Collaboration among students on problem sets or term project phases to be completed as a team is encouraged. The team needs to submit only one document for the whole team.

The term project for this course is divided into four phases with four deliverables (TP I through TP IV) — one for each phase — and is to be performed by a set of students working as a company. As mentioned before, a final term project grade is assigned to each team based on these four deliverables. Project grades are adjusted for each individual based on each individual's contribution to the project. To establish individual contributions, a peer evaluation is performed at each term project phase. These evaluations ask each team member to distribute a financial "bonus" among the team members, provide a recommendation for each member of the team, evaluate the effect of each member to the morale of the team, evaluate the contribution of the team member to the term project and assign a "title" to each member of the team including the person filling out the form. There is the expectation that such evaluation will be filled individually and maintained confidential. It is also expected that team members will behave professionally and honestly while filling the evaluation. Any consultation with other team members when filling the evaluation is strictly forbidden.

Note: Individual class participation involves participation in lectures, laboratories, in-class discussions.

###### Labs

During the Labs session, Exercise Questions from the book, Case Studies, Home Works and Some problems will be given to the students related to the Topics covered in a particular Week.

###### (iii) Methods of assessment of knowledge acquired

1	Lab activities
2	Homework/Class Participation
3	Term Project

**b. Cognitive Skills**

**(i) Cognitive skills to be developed**

**(ii) Teaching strategies to be used to develop these cognitive skills.**

**(iii) Methodes of assessment of student's cognitive skills.**

**c. Interpersonal Skills and Responsibility**

**(i) Description of the interpersonal skills and capacity to carry responsibility to be developed.**

**(ii) Teaching strategies to be used to develop these skills and abilities**

**(iii) Methods of assessment of student's interpersonal skills and capacity to carry responsibility**

**d. Communication, Information Technology and Numerical Skills.**

**(i) Description of the skills to be developed in this domain.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's numerical and communication skills.**

**e. Psychomotor Skills (if applicable)**

**(i) Description of the psychomotor skills to be developed and level of performance required.**

(ii) Methods of assessment to be used to develop the skills.

#### 5 - Schedule of Assessment Tasks for Students During the Semester

Assessment	Assessment task (eg. essay, test, group project, examination, etc)	Week due	Proportion of final Assessment
1	Lab activities		15
2	Homework/Class Participation		25
3	Term Project		60

#### D. Student Support

1 - Arrangements for availability of faculty for individual student consultations and academic advice. (include amount of time faculty are available each week)

#### E. Learning Resources

##### 1 - Required Text(s).

Cohn, "Agile Estimating and Planning", Prentice Hall PTR, 2007  
ISBN-13 9780131479418 ISBN-10 0131479415

##### 2 - Essential References

Cohn, "Agile Estimating and Planning", Prentice Hall PTR, 2007  
ISBN-13 9780131479418 ISBN-10 0131479415

##### 3 - Recommended Books and Reference Material (Journals, Reports, ets) (Attach List)

##### 4 - Electronic Materials, Web Sites etc.

##### 5 - Other Learning material such as computer-based programs/CD, professional standards/regulations

#### F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)

1. Accommodation (Lecture rooms, laboratories, etc.)

2. Computing resources

3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)

## **G . Course Evaluation and Improvement Processes**

<b>1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching</b>
<b>2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department</b>
<b>3 Processes for Improvement of Teaching</b>
<b>4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)</b>
<b>5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.</b>

# Course Specification

Institution	King Abdulaziz University
College / Department	Faculty of Computing and Information Technology / Information Technology

## A - Course Identification and General Information

<b>1 - Course Title and code:</b>	Database (II) / CPIT-340
<b>2 - Credit hours:</b>	3
<b>3 - Program in which the course is offered:</b>	B.S.Information Technology
<b>4 - Name of Faculty member responsible for the course</b>	Mr. Bakr Rizwan Shaker Alsobani
<b>5 - Level/year at which this course is offered</b>	Junior - 300
<b>6 - Co-requisites for this course (if any)</b>	
<b>7 - Pre-requisites for this course (if any)</b>	CPIT-240
<b>8 - Location if not offered in main campus</b>	Boys - Sulimania , Girls - Sulimania , Girls - Faisalia , Boys - North Jeddah , Girls - North Jeddah

## B - Objectives

<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>
1 Define Distributed Database Concepts, Data Fragmentation, and Replication.
2 Distinguish Types of Distributed Database Systems
3 Demonstrate Query Processing in Distributed Databases
4 Describe Concurrency Control and Recovery in Distributed Databases
5 Define 3-Tier Client-Server Architecture
6 Apply Distributed Databases in Oracle
7 Define Object-Oriented Concepts, Object Identity, Object Structure, and Type Constructors
8 List Class Hierarchies and Inheritance, Complex Objects.
9 Analyze Active Database Concepts and Triggers, Temporal Database, Spatial and Multimedia Databases
10 Define Deductive Databases
11 Illustrate Physical Database Design in Relational Databases
12 Define Database Tuning in Relational Systems
13 Describe Concurrency Control Based on Timestamp Ordering
14 Describe Two-Phase Locking Techniques for Concurrency Control
15 List Multi-version Concurrency Control Techniques
16 Discover Granularity of Data Items and Multiple Granularity Locking



<b>1 - Summary of the main learning outcomes for students enrolled in the course</b>	
17	Use Locks for Concurrency Control in Indexes
18	Define Database Security Issues , Public Key Infrastructures , Privacy Issues and Preservation
19	Describe Access Control Based on Granting and Revoking Privileges
20	Define Statistical Database Security, Flow Control
21	List Challenges to Database Security.
<b>2 - Briefly describe any plans for developing and improving the course that are being implemented.</b>	

**C - Course Description** ( Note: General description in the form to be used for the Bulletin or Handbook should be attached)

<b>1 - Topics to be Covered:</b>
CPIT 340 is an Advance course in Database. this is an advance elective course in the database track. this course helps students in research as well as practical field. Major topics in the field of database are taught to the students so that they can opt for advance research studies or opt for practical filed Topics covered include: Distributed Databases and Client-Server Architectures, Concepts for Object Databases, Enhanced Data Models for Advanced Applications, Database Tuning in Relational Database Systems, Concurrency Control Techniques, and Database Security.

<b>2 - Course components (total contact hours per semester):</b>			
Lecture:	Tutorial:	Practical/Fieldwork/Internship	Other
3	1	0	

<b>3 - Additional private study/learning hours expected for students per week. (This should be an average for the semester not a specific requirement in each week):</b>

<b>4 - Development of Learning Outcomes in Domains of Learning</b>
For each of the domains of learning shown below indicate:
- A brief summary of the knowledge or skill the course is intended to develop;
- Adescription of the teaching strategies to be used in the curse to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evalute learning outcomes in the domain concerned.

**a. Knowledge**

<b>(i) Description of the knowledge to be acquired</b>
Distributed Databases and Client-Server Architectures Concepts for Object Databases Enhanced Data Models for Advanced Applications Database Tuning in Relational Database Systems Concurrency Control Techniques Database Security
<b>(ii) Teaching strategies to be used to develop that knowledge</b>
<b>Lectures</b> Instructor will teach the topics of the course emphasizing on the course related learning objectives through three fifty minutes lecture meetings per week. Lectures will, in most cases, have a mix of formal lecturing and active learning.
<b>Labs</b> During the tutorials (80 minutes meeting per week), the instructor will solve example problems related to the recently introduced topic. The instructor will also discuss with the students the problems they faced while trying to solve the assigned homework problems. Some of the tutorials are devoted for training the students on software packages and tools needed in the course.
<b>Projects</b> A number of projects are assigned throughout the semester. The projects involve topics that require the use of provided software tools, simulation experiments, and the implementation of theoretically studied issues. Students are grouped in teams, each of 4 students. Each team should submit report and give a presentation of their work.

**4 - Development of Learning Outcomes in Domains of Learning**

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.

**a. Knowledge****(iii) Methods of assessment of knowledge acquired**

1	Final Exam
2	Midterm Exam
3	Lab Test
4	Quizzes & Assignments

**b. Cognitive Skills****(i) Cognitive skills to be developed****(ii) Teaching strategies to be used to develop these cognitive skills.****(iii) Methodes of assessment of student's cognitive skills.****c. Interpersonal Skills and Responsibility****(i) Description of the interpersonal skills and capacity to carry responsibility to be developed.****(ii) Teaching strategies to be used to develop these skills and abilities****(iii) Methods of assessment of student's interpersonal skills and capacity to carry responsibility**

**d. Communication, Information Technology and Numerical Skills.**

**(i) Description of the skills to be developed in this domain.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's numerical and communication skills.**

**e. Psychomotor Skills (if applicable)**

**(i) Description of the psychomotor skills to be developed and level of performance required.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's psychomotor skills.**

**5 - Schedule of Assessment Tasks for Students During the Semester**

Assessment	Assessment task (eg. essay, test, group project, examination, etc)	Week due	Proportion of final Assessment
1	Final Exam		40
2	Midterm Exam		20
3	Lab Test		25
4	Quizzes & Assignments		15

**D. Student Support**

**1 - Arrangements for availability of faculty for individual student consultations and academic advice. (include amount of timen faculty are available each week)**

## E. Learning Resources

<b>1 - Required Text(s).</b> Silberschatz, H. Korth, S. Sudarshan, "Database System Concepts", Mcgraw-Hill Education, 5th Edition, 2005 ISBN-13 9780071244763 ISBN-10 007124476X
<b>2 - Essential References</b> Silberschatz, H. Korth, S. Sudarshan, "Database System Concepts", Mcgraw-Hill Education, 5th Edition, 2005 ISBN-13 9780071244763 ISBN-10 007124476X
<b>3 - Recommended Books and Reference Material (Journals, Reports, ets) (Attach List)</b>
<b>4 - Electronic Materials, Web Sites etc.</b>
<b>5 - Other Learning material such as computer-based programs/CD, professional standards/regulations</b>

## F. Facilities Required

<b>Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)</b>
<b>1. Accommodation (Lecture rooms, laboratories, etc.)</b>
<b>2. Computing resources</b>
<b>3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)</b>

## G . Course Evaluation and Improvement Processes

<b>1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching</b>
<b>2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department</b>
<b>3 Processes for Improvement of Teaching</b>
<b>4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)</b>
<b>5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.</b>

# Course Specification

Institution	King Abdulaziz University
College / Department	Faculty of Computing and Information Technology / Information Technology

## A - Course Identification and General Information

<b>1 - Course Title and code:</b>
Database Administration / CPIT-345
<b>2 - Credit hours:</b>
3
<b>3 - Program in which the course is offered:</b>
B.S.Information Technology
<b>4 - Name of Faculty member responsible for the course</b>
Dr. Fouad Ghushaim Bajaber
<b>5 - Level/year at which this course is offered</b>
Junior - 300
<b>6 - Co-requisites for this course (if any)</b>
<b>7 - Pre-requisites for this course (if any)</b>
CPIT-240
<b>8 - Location if not offered in main campus</b>
Boys - Sulimania , Girls - Sulimania , Girls - Faisalia , Boys - North Jeddah , Girls - North Jeddah

## B - Objectives

<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>
<b>2 - Briefly describe any plans for developing and improving the course that are being implemented.</b>

**C - Course Description** ( Note: General description in the form to be used for the Bulletin or Handbook should be attached)

<b>1 - Topics to be Covered:</b>

<b>2 - Course components (total contact hours per semester):</b>			
Lecture:	Tutorial:	Practical/Fieldwork/Internship	Other
3	1	0	

<b>3 - Additional private study/learning hours expected for students per week. (This should be an average for the semester not a specific requirement in each week):</b>

<b>4 - Development of Learning Outcomes in Domains of Learning</b> For each of the domains of learning shown below indicate: - A brief summary of the knowledge or skill the course is intended to develop; - A description of the teaching strategies to be used in the course to develop that knowledge or skill; - The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.
<b>a. Knowledge</b>
(i) Description of the knowledge to be acquired
(ii) Teaching strategies to be used to develop that knowledge
(iii) Methods of assessment of knowledge acquired
<b>b. Cognitive Skills</b>
(i) Cognitive skills to be developed
(ii) Teaching strategies to be used to develop these cognitive skills.
(iii) Methodes of assessment of student's cognitive skills.

**c. Interpersonal Skills and Responsibility**

**(i) Description of the interpersonal skills and capacity to carry responsibility to be developed.**

**(ii) Teaching strategies to be used to develop these skills and abilities**

**(iii) Methods of assessment of student's interpersonal skills and capacity to carry responsibility**

**d. Communication, Information Technology and Numerical Skills.**

**(i) Description of the skills to be developed in this domain.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's numerical and communication skills.**

**e. Psychomotor Skills (if applicable)**

**(i) Description of the psychomotor skills to be developed and level of performance required.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's psychomotor skills.**

## 5 - Schedule of Assessment Tasks for Students During the Semester

Assessment	Assessment task (eg. essay, test, group project, examination, etc)	Week due	Proportion of final Assessment

## D. Student Support

1 - Arrangements for availability of faculty for individual student consultations and academic advice. (include amount of time faculty are available each week)

## E. Learning Resources

<b>1 - Required Text(s).</b> Mullins, "Database Administration: The Complete Guide to Practices and Procedures", Addison-Wesley, 2002 ISBN-13 9780201741292 ISBN-10 0201741296
<b>2 - Essential References</b> Mullins, "Database Administration: The Complete Guide to Practices and Procedures", Addison-Wesley, 2002 ISBN-13 9780201741292 ISBN-10 0201741296
<b>3 - Recommended Books and Reference Material (Journals, Reports, ets) (Attach List)</b>
<b>4 - Electronic Materials, Web Sites etc.</b>
<b>5 - Other Learning material such as computer-based programs/CD, professional standards/regulations</b>

## F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)
<b>1. Accommodation (Lecture rooms, laboratories, etc.)</b>
<b>2. Computing resources</b>
<b>3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)</b>



## **G . Course Evaluation and Improvement Processes**

<b>1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching</b>
<b>2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department</b>
<b>3 Processes for Improvement of Teaching</b>
<b>4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)</b>
<b>5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.</b>

# Course Specification

Institution	King Abdulaziz University
College / Department	Faculty of Computing and Information Technology / Information Technology

## A - Course Identification and General Information

<b>1 - Course Title and code:</b>
Computer Networks / CPIT-370
<b>2 - Credit hours:</b>
3
<b>3 - Program in which the course is offered:</b>
B.S.Information Technology
<b>4 - Name of Faculty member responsible for the course</b>
Prof. Muhammad Asharf Madkour
<b>5 - Level/year at which this course is offered</b>
Junior - 300
<b>6 - Co-requisites for this course (if any)</b>
<b>7 - Pre-requisites for this course (if any)</b>
CPIT-260
<b>8 - Location if not offered in main campus</b>
Boys - Sulimania , Girls - Sulimania , Girls - Faisalia , Boys - North Jeddah , Girls - North Jeddah

## B - Objectives

<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>
1 Draw network topology for simple, hybrid, and interconnected networks.
2 Identify data communication components
3 List the functionality of the layers in the ISO-OSI standard network model.
4 Classify the signals and interpret their characteristics
5 Use simulation tools to understand signal characteristics.
6 Compute the transmission parameters for a communication channel to suit a specified application.
7 Draw multiplexing schemes for data transmission.
8 Compute the output data rate and overhead in different multiplexing schemes.
9 Compare the performance of the basic transmission media.

<b>1 - Summary of the main learning outcomes for students enrolled in the course</b>	
10	Summarize the techniques used for transmission-error detection.
11	Compute error detection and/or correction codewords.
12	Classify and summarize the multiple access techniques.
13	Classify wired LANs and summarize their characteristics.
14	Explain the operation of wireless LANs based on the IEEE 802.11 standards.
15	Configure, administrate, and operate experimental wired- and wireless LANs.
16	Design LAN topologies that include networking devices to meet user requirements.
17	Prepare and deliver a presentation about wired- and/or wireless LANs.
18	Compute classless IP addresses to meet user requirements.
19	Identify the operation of the network layer protocols in the Internet.
20	Experiment with professional software package (such as Wireshark) for packet capturing and network monitoring.
21	Examine the network operation using the packet capturing package.
22	Summarize the domain name space and explain the operation of the DNS in the internet.
<b>2 - Briefly describe any plans for developing and improving the course that are being implemented.</b>	

**C - Course Description** ( Note: General description in the form to be used for the Bulletin or Handbook should be attached)

<b>1 - Topics to be Covered:</b>
<p>This is an introductory course to provide a wide background of computer networks. This course is intended to provide basic knowledge of data communication, medium accessing protocols, local area networks, and an overview of the higher level protocols. Topics include: Principles of computer networks. Network standard models; Analog and digital signals; Multiplexing schemes; Error-detection schemes; Transmission media; Multiple access techniques; Wired and wireless LANs; Network devices; IP addressing; Network and transport protocols; Domain name system; Laboratory experiments.</p>

<b>2 - Course components (total contact hours per semester):</b>			
Lecture:	Tutorial:	Practical/Fieldwork/Internship	Other
3	1	0	

<b>3 - Additional private study/learning hours expected for students per week. (This should be an average for the semester not a specific requirement in each week):</b>

<b>4 - Development of Learning Outcomes in Domains of Learning</b>
<p>For each of the domains of learning shown below indicate:</p> <ul style="list-style-type: none"> <li>- A brief summary of the knowledge or skill the course is intended to develop;</li> <li>- A description of the teaching strategies to be used in the course to develop that knowledge or skill;</li> <li>- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.</li> </ul>
<b>a. Knowledge</b>
<b>(i) Description of the knowledge to be acquired</b>

#### 4 - Development of Learning Outcomes in Domains of Learning

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.

##### a. Knowledge

Introduction to computer networks

Network standard models

Analog and digital signals

Multiplexing schemes

Transmission media

Error-detection schemes

Multiple access techniques

Wired and wireless LANs

Network devices

IP addressing

Domain name system

##### (ii) Teaching strategies to be used to develop that knowledge

###### Lectures

Instructor will teach the topics of the course emphasizing on the course related learning objectives through two eighty minutes lecture meetings per week. Lectures will, in most cases, have a mix of formal lecturing and active learning.

###### Tutorials

During the tutorials (one eighty minutes meeting per week), the instructor will solve example problems related to the recently introduced topic. The instructor will also discuss with the students the problems they faced while trying to solve the assigned homework problems. Some of the tutorials are devoted for conducting lab experiments and training the students on software packages and tools needed in the course.

###### Projects

Projects: A number of projects are assigned throughout the semester. The projects involve topics that require the use of provided software tools, simulation experiments, and the implementation of theoretically studied issues. Students are grouped in teams, each of 4 students. Each team should submit report and give a presentation of their work.

##### (iii) Methods of assessment of knowledge acquired

1	Final Exam
2	Test 1
3	Test 2
4	Quiz
5	Graded Lab Assignments
6	Project Report 1
7	Project Report 2
8	Discussion
9	Project Report 3

##### b. Cognitive Skills

##### (i) Cognitive skills to be developed

##### (ii) Teaching strategies to be used to develop these cognitive skills.

##### (iii) Methodes of assessment of student's cognitive skills.

**c. Interpersonal Skills and Responsibility**

**(i) Description of the interpersonal skills and capacity to carry responsibility to be developed.**

**(ii) Teaching strategies to be used to develop these skills and abilities**

**(iii) Methods of assessment of student's interpersonal skills and capacity to carry responsibility**

**d. Communication, Information Technology and Numerical Skills.**

**(i) Description of the skills to be developed in this domain.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's numerical and communication skills.**

**e. Psychomotor Skills (if applicable)**

**(i) Description of the psychomotor skills to be developed and level of performance required.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's psychomotor skills.**

## 5 - Schedule of Assessment Tasks for Students During the Semester

Assessment	Assessment task (eg. essay, test, group project, examination, etc)	Week due	Proportion of final Assessment
1	Final Exam		40
2	Test 1		20
3	Test 2		15
4	Quiz		5
5	Graded Lab Assignments		12
6	Project Report 1		2
7	Project Report 2		2
8	Discussion		2
9	Project Report 3		2

### D. Student Support

1 - Arrangements for availability of faculty for individual student consultations and academic advice. (include amount of time faculty are available each week)

### E. Learning Resources

<b>1 - Required Text(s).</b> Forouzan, "Data Communications and Networking", McGraw-Hill, 4th Edition, 2006 ISBN-13 9780073250328 ISBN-10 0073250325
<b>2 - Essential References</b> Forouzan, "Data Communications and Networking", McGraw-Hill, 4th Edition, 2006 ISBN-13 9780073250328 ISBN-10 0073250325
<b>3 - Recommended Books and Reference Material (Journals, Reports, ets) (Attach List)</b>
<b>4 - Electronic Materials, Web Sites etc.</b>
<b>5 - Other Learning material such as computer-based programs/CD, professional standards/regulations</b>

### F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)
<b>1. Accommodation (Lecture rooms, laboratories, etc.)</b>
<b>2. Computing resources</b>
<b>3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)</b>

## **G . Course Evaluation and Improvement Processes**

<b>1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching</b>
<b>2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department</b>
<b>3 Processes for Improvement of Teaching</b>
<b>4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)</b>
<b>5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.</b>

# Course Specification

Institution	King Abdulaziz University
College / Department	Faculty of Computing and Information Technology / Information Technology

## A - Course Identification and General Information

<b>1 - Course Title and code:</b>	Multimedia Technologies / CPIT-380
<b>2 - Credit hours:</b>	3
<b>3 - Program in which the course is offered:</b>	B.S.Information Technology
<b>4 - Name of Faculty member responsible for the course</b>	Mr. Murshed Bin Alwardi Alderbali
<b>5 - Level/year at which this course is offered</b>	Junior - 300
<b>6 - Co-requisites for this course (if any)</b>	
<b>7 - Pre-requisites for this course (if any)</b>	CPIT-285
<b>8 - Location if not offered in main campus</b>	Boys - Sulimania , Girls - Sulimania , Girls - Faisalia , Boys - North Jeddah , Girls - North Jeddah

## B - Objectives

<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>
1 Distinguish between Computer Science and Media Computation
2 Describe the process of digitizing media.
3 Understand the concept of encoding pictures.
4 Identify different models for color, including RGB, the most common one for computers.
5 Change color values in pictures by increasing and decreasing red, green and blue components.
6 Convert a picture to gray scale.
7 Create the negative of a picture.
8 Mirror a picture vertically and horizontally.
9 Transforming pictures by collage, blend, rotate and scale pictures.
10 Replace a color with another in pictures and apply it to do edge detection.
11 Understand sepia-tone, posterizing and blurring pictures.
12 Replace the background in a picture.
13 Understand how sounds are encoded and how to use the Nyquist theorem to determine the sampling rate necessary for digitizing a desired sound.
14 Manipulate the volume of a sound: decrease, increase volume and normalizing a sound.
15 Manipulate parts of a sound differently, create a sound clip, splice sounds together to make sound compositions, reverse and



<b>1 - Summary of the main learning outcomes for students enrolled in the course</b>	
16	Making Sounds by Combining Pieces: Blend sounds so that one fades into another. create echoes and change the frequency (pitch) of a sound.
17	Create sounds that don't exist in nature by composing more basic sounds (sine waves) and understand sound formats.
18	Generate a form letter and manipulate structured text, such as a delimited string.
19	Write programs that read from files and write to files and write programs that use text information from the Internet.
20	Generate randomly structured text and use text to change encodings of information like creating visualizations of sounds.
21	Gain some basic skill with HTML, generate HTML automatically for input data and use databases to generate Web content.
22	Create frame-based animations with simple geometric shapes, text, and images.
23	Do special effects like fade-out and chromakey in movies
<b>2 - Briefly describe any plans for developing and improving the course that are being implemented.</b>	

**C - Course Description** ( Note: General description in the form to be used for the Bulletin or Handbook should be attached)

<b>1 - Topics to be Covered:</b>
<p>“: A Multimedia Approach” is a course prerequisite by a study of a Graphics using Java .Students will learn about programming by writing programs to manipulate media. Students will create and modify images, such as correcting for "red-eye" and generating negative images. Students will modify sounds, like splicing words into sentences or reversing sounds to make interesting effects. Students will write programs to generate Web pages from data in databases, in the same way that CNN.com and Amazon.com do. They will create animations and movies using special effects like the ones seen on television and in movies.</p>

<b>2 - Course components (total contact hours per semester):</b>			
Lecture:	Tutorial:	Practical/Fieldwork/Internship	Other
3	1	0	

<b>3 - Additional private study/learning hours expected for students per week. (This should be an average for the semester not a specific requirement in each week):</b>

<b>4 - Development of Learning Outcomes in Domains of Learning</b>
<p>For each of the domains of learning shown below indicate:</p> <ul style="list-style-type: none"> <li>- A brief summary of the knowledge or skill the course is intended to develop;</li> <li>- A description of the teaching strategies to be used in the course to develop that knowledge or skill;</li> <li>- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.</li> </ul>
<b>a. Knowledge</b>
<p><b>(i) Description of the knowledge to be acquired</b></p> <p>Introduction to Computer Science and Media Computation .          Modifying Pictures Using Loops.          Enhanced Data Models for Advanced Applications          Database Tuning in Relational Database Systems.          Modifying Samples Using Ranges          Making Sounds by Combining Pieces          Creating and Modifying Text          Making Text for the Web          Encoding, Manipulating, and Creating Movies          Revision Week For Final Exam</p>

**4 - Development of Learning Outcomes in Domains of Learning**

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.

**a. Knowledge****(ii) Teaching strategies to be used to develop that knowledge****Lectures**

Instructor will teach the topics of the course emphasizing on the course related learning objectives through three fifty minutes lecture meetings per week. Lectures will, in most cases, have a mix of formal lecturing and active learning.

**Labs**

During the tutorials (80 minutes meeting per week), the instructor will solve example problems related to the recently introduced topic. The instructor will also discuss with the students the problems they faced while trying to solve the assigned homework problems. Some of the tutorials are devoted for training the students on software packages and tools needed in the course.

**Projects**

A number of projects are assigned throughout the semester. The projects involve topics that require the use of provided software tools, simulation experiments, and the implementation of theoretically studied issues. Students are grouped in teams, each of 4 students. Each team should submit report and give a presentation of their work.

**(iii) Methods of assessment of knowledge acquired**

1	Final Exam
2	Midterm Exam
3	First Exam
4	Lab
5	Project
6	Quizzes & Assignments

**b. Cognitive Skills****(i) Cognitive skills to be developed****(ii) Teaching strategies to be used to develop these cognitive skills.****(iii) Methodes of assessment of student's cognitive skills.**

**c. Interpersonal Skills and Responsibility**

**(i) Description of the interpersonal skills and capacity to carry responsibility to be developed.**

**(ii) Teaching strategies to be used to develop these skills and abilities**

**(iii) Methods of assessment of student's interpersonal skills and capacity to carry responsibility**

**d. Communication, Information Technology and Numerical Skills.**

**(i) Description of the skills to be developed in this domain.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's numerical and communication skills.**

**e. Psychomotor Skills (if applicable)**

**(i) Description of the psychomotor skills to be developed and level of performance required.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's psychomotor skills.**

## 5 - Schedule of Assessment Tasks for Students During the Semester

Assessment	Assessment task (eg. essay, test, group project, examination, etc)	Week due	Proportion of final Assessment
1	Final Exam		20
2	Midterm Exam		20
3	First Exam		20
4	Lab		20
5	Project		10
6	Quizzes & Assignments		10

### D. Student Support

**1 - Arrangements for availability of faculty for individual student consultations and academic advice. (include amount of time faculty are available each week)**

### E. Learning Resources

<b>1 - Required Text(s).</b> Steinmetz and K. Nahrstedt, "Multimedia Fundamentals, Volume 1: Media Coding and Content Processing", Prentice Hall, 2nd Edition, 2002 ISBN-13 9780130313997 ISBN-10 0130313998
<b>2 - Essential References</b> Steinmetz and K. Nahrstedt, "Multimedia Fundamentals, Volume 1: Media Coding and Content Processing", Prentice Hall, 2nd Edition, 2002 ISBN-13 9780130313997 ISBN-10 0130313998
<b>3 - Recommended Books and Reference Material (Journals, Reports, ets) (Attach List)</b>
<b>4 - Electronic Materials, Web Sites etc.</b>
<b>5 - Other Learning material such as computer-based programs/CD, professional standards/regulations</b>

### F. Facilities Required

<b>Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)</b>
<b>1. Accommodation (Lecture rooms, laboratories, etc.)</b>
<b>2. Computing resources</b>
<b>3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)</b>

## **G . Course Evaluation and Improvement Processes**

<b>1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching</b>
<b>2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department</b>
<b>3 Processes for Improvement of Teaching</b>
<b>4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)</b>
<b>5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.</b>

# Course Specification

Institution	King Abdulaziz University
College / Department	Faculty of Computing and Information Technology / Information Technology

## A - Course Identification and General Information

<b>1 - Course Title and code:</b>	Internet Applications / CPIT-405
<b>2 - Credit hours:</b>	3
<b>3 - Program in which the course is offered:</b>	B.S.Information Technology
<b>4 - Name of Faculty member responsible for the course</b>	Mr. Reda Muhammad Salama
<b>5 - Level/year at which this course is offered</b>	Senior - 400
<b>6 - Co-requisites for this course (if any)</b>	
<b>7 - Pre-requisites for this course (if any)</b>	CPIT-370 CPIT-252
<b>8 - Location if not offered in main campus</b>	Boys - Sulimania , Girls - Sulimania , Girls - Faisalia , Boys - North Jeddah , Girls - North Jeddah

## B - Objectives

<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>
1 Describe the essential concepts associated with internet architecture that supports web applications.
2 Understand the basic structure of the World-Wide-Web.
3 Install and configure Apache Web Server.
4 Identify the compatibility issues between the well-known browsers.
5 Construct a web browser that implements a small subset of HTTP.
6 Identify the XHTML markup tags for structuring web pages.
7 Identify the CSS properties and elements for styling, formatting, and enhancing web pages.
8 Construct and validate web pages using HTML 4.01, XHTML 1.0 and CSS 2.1.
9 Implement client-side application logic using JavaScript and DOM.
10 Develop dynamic web pages using Ajax technology.
11 Compare and contrast between HTML and XML.
12 Create and use extensible markup language (XML).
13 Define XML related concepts and languages.
14 Compare between DTD and Schema for XML Documents.
15 Validate XML documents.
16 Apply XPATH and DOM to navigate through XML Document.

<b>1 - Summary of the main learning outcomes for students enrolled in the course</b>
17 Use XSLT to transform XML document into XHTML.
18 Identify trends in web technologies.
19 Demonstrate the ability to communicate effectively.
<b>2 - Briefly describe any plans for developing and improving the course that are being implemented.</b>

**C - Course Description** ( Note: General description in the form to be used for the Bulletin or Handbook should be attached)

<b>1 - Topics to be Covered:</b>
Topics include: The Internet and its Architecture ,Client-Server Networking: HTTP ,Introduction to XHTML ,Cascading Style Sheets ,JavaScript:part1 ,Review & First Exam ,Document Object Model (DOM) ,JavaScript: part3 ,Review & Second Exam ,XML: part1 ,XML: part2 ,Ajax-Enabled Rich Internet Applications ,Review/Lab Exam ,JavaScript:part2

<b>2 - Course components (total contact hours per semester):</b>			
Lecture:	Tutorial:	Practical/Fieldwork/Internship	Other
3	1	0	

<b>3 - Additional private study/learning hours expected for students per week. (This should be an average for the semester not a specific requirement in each week):</b>

<b>4 - Development of Learning Outcomes in Domains of Learning</b>
For each of the domains of learning shown below indicate:
- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.

**a. Knowledge**

<b>(i) Description of the knowledge to be acquired</b>
The Internet and its Architecture
HTTP Description
Introduction to XHTML
Cascading Style Sheets
JavaScript:part1
JavaScript:part1 & First Exam
JavaScript:part2
Document Object Model (DOM)
JavaScript: part3
Review & Second Exam
XML: part1
XML: part2
Ajax-Enabled Rich Internet Applications
Review/Lab Exam

**4 - Development of Learning Outcomes in Domains of Learning**

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.

**a. Knowledge****(ii) Teaching strategies to be used to develop that knowledge****Lectures**

Instructor will teach the topics of the course emphasizing on the course related learning objectives through three fifty minutes lecture meetings per week. Lectures will, in most cases, have a mix of formal lecturing and active learning.

Student learning outcomes will be measured by major exams, Home works, and final exam.

**Tutorials**

During the tutorials (one 80 minutes meeting per week), the instructor will solve example problems related to the recently introduced topic. The instructor will also discuss with the students the problems they faced while trying to solve the selected problems. Some of the tutorials are devoted for training the students on tools needed in the course.

**Home works**

A number of Home works are assigned throughout the semester. Each homework is related to the covered material. The homework problems will be solved by the instructor during the tutorial session

**(iii) Methods of assessment of knowledge acquired****b. Cognitive Skills****(i) Cognitive skills to be developed****(ii) Teaching strategies to be used to develop these cognitive skills.****(iii) Methodes of assessment of student's cognitive skills.****c. Interpersonal Skills and Responsibility****(i) Description of the interpersonal skills and capacity to carry responsibility to be developed.****(ii) Teaching strategies to be used to develop these skills and abilities****(iii) Methods of assessment of student's interpersonal skills and capacity to carry responsibility**



**d. Communication, Information Technology and Numerical Skills.**

**(i) Description of the skills to be developed in this domain.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's numerical and communication skills.**

**e. Psychomotor Skills (if applicable)**

**(i) Description of the psychomotor skills to be developed and level of performance required.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's psychomotor skills.**

**5 - Schedule of Assessment Tasks for Students During the Semester**

<b>Assessment</b>	<b>Assessment task (eg. essay, test, group project, examination, etc)</b>	<b>Week due</b>	<b>Proportion of final Assessment</b>
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**D. Student Support**

**1 - Arrangements for availability of faculty for individual student consultations and academic advice. (include amount of timen faculty are available each week)**

## E. Learning Resources

<b>1 - Required Text(s).</b> Gittleman, "Advanced Java: Internet Applications", Addison Wesley, 2nd Edition, 2001 ISBN-13 9781576760963 ISBN-10 1576760960
<b>2 - Essential References</b> Gittleman, "Advanced Java: Internet Applications", Addison Wesley, 2nd Edition, 2001 ISBN-13 9781576760963 ISBN-10 1576760960
<b>3 - Recommended Books and Reference Material (Journals, Reports, ets) (Attach List)</b>
<b>4 - Electronic Materials, Web Sites etc.</b>
<b>5 - Other Learning material such as computer-based programs/CD, professional standards/regulations</b>

## F. Facilities Required

<b>Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)</b>
<b>1. Accommodation (Lecture rooms, laboratories, etc.)</b>
<b>2. Computing resources</b>
<b>3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)</b>

## G . Course Evaluation and Improvement Processes

<b>1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching</b>
<b>2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department</b>
<b>3 Processes for Improvement of Teaching</b>
<b>4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)</b>
<b>5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.</b>

# Course Specification

Institution	King Abdulaziz University
College / Department	Faculty of Computing and Information Technology / Information Technology

## A - Course Identification and General Information

<b>1 - Course Title and code:</b>	Information Security / CPIT-425
<b>2 - Credit hours:</b>	3
<b>3 - Program in which the course is offered:</b>	B.S.Information Technology
<b>4 - Name of Faculty member responsible for the course</b>	Prof. Muhammad Asharf Madkour
<b>5 - Level/year at which this course is offered</b>	Senior - 400
<b>6 - Co-requisites for this course (if any)</b>	
<b>7 - Pre-requisites for this course (if any)</b>	CPIT-370
<b>8 - Location if not offered in main campus</b>	Boys - Sulimania , Girls - Sulimania , Girls - Faisalia , Boys - North Jeddah , Girls - North Jeddah

## B - Objectives

<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>
1 Identify the security attacks.
2 Explain the network security model.
3 Summarize the symmetric encryption scheme.
4 Explain the approaches to attacking a conventional encryption scheme.
5 Apply traditional cipher techniques for encrypting and decrypting textual messages.
6 Develop programs to encrypt and decrypt text messages using some traditional ciphers.
7 Demonstrate the internal operation and properties of modern encryption standards (DES and AES).
8 Describe the block cipher modes of operation.
9 Summarize the public-key encryption scheme.
10 Explain the use of public-key cryptosystems for authentication, secrecy, and key exchange.
11 Demonstrate the operation and properties of some strong public-key algorithms (RSA, Diffie-Hillman, and ElGamal).
12 Develop programs to use RSA, Diffie-Hillman, and ElGamal algorithms for cryptographic applications.
13 Describe the use of a hash function in message authentication and digital signature.
14 Describe the use of message authentication code (HMAC and CMAC) functions for authentication.
15 Describe various digital signature schemes (RSA, ElGamal, and DSS).
16 Develop programs to produce and verify the digital signature of a message based on the RSA and ElGamal schemes.

<b>1 - Summary of the main learning outcomes for students enrolled in the course</b>	
17	Contrast the centralized and decentralized key distribution schemes.
18	Describe the use of X.509 public-key certificates.
19	Describe and contrast the transport layer security protocols (SSL and TLS)
20	Identify types and operation of firewalls.
21	Configure firewall systems for protecting local systems and networks.
<b>2 - Briefly describe any plans for developing and improving the course that are being implemented.</b>	

**C - Course Description** ( Note: General description in the form to be used for the Bulletin or Handbook should be attached)

<b>1 - Topics to be Covered:</b>
<p>This is an introductory course to information security in computer networks. This course is intended to provide basic knowledge about the technical and operational issues of modern cryptosystems and the related standards. Topics include: Threats to network security; Classical encryption techniques; Block ciphers and stream ciphers; DES and triple DES; AES; Block cipher operation modes; Asymmetric ciphers: RSA, Diffie-Hellman key exchange, ElGamal cryptosystem; Hash functions; MAC functions; Digital signature; Key management and distribution; X.509 certificates; Transport level security: SSL, TLS, and SSH. Intrusion; Malicious software; Denial of service attacks.</p>

<b>2 - Course components (total contact hours per semester):</b>			
Lecture:	Tutorial:	Practical/Fieldwork/Internship	Other
3	1	0	

<b>3 - Additional private study/learning hours expected for students per week. (This should be an average for the semester not a specific requirement in each week):</b>

<b>4 - Development of Learning Outcomes in Domains of Learning</b>
<p>For each of the domains of learning shown below indicate:</p> <ul style="list-style-type: none"> <li>- A brief summary of the knowledge or skill the course is intended to develop;</li> <li>- A description of the teaching strategies to be used in the course to develop that knowledge or skill;</li> <li>- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.</li> </ul>
<b>a. Knowledge</b>
<p><b>(i) Description of the knowledge to be acquired</b></p> <p>Introduction to computer network security  Symmetric Ciphers  Public-key cryptography  Key management  Web security  Firewalls</p>

**4 - Development of Learning Outcomes in Domains of Learning**

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.

**a. Knowledge****(ii) Teaching strategies to be used to develop that knowledge****Lectures**

Instructor will teach the topics of the course emphasizing on the course related learning objectives through two eighty minutes lecture meetings per week. Lectures will, in most cases, have a mix of formal lecturing and active learning.

**Tutorials**

During the tutorials (one eighty minutes meeting per week), the instructor will solve example problems related to the recently introduced topic. The instructor will also discuss with the students the problems they faced while trying to solve the assigned homework problems. Some of the tutorials are devoted for conducting programming assignments and training the students on software packages and tools needed in the course.

**Projects**

A number of programming projects are assigned throughout the semester. The projects involve topics that require the implementation of theoretically studied issues. Students are grouped in teams, each of 4 students. Each team should submit report and give a presentation of their work.

**(iii) Methods of assessment of knowledge acquired**

1	Final Exam
2	Test 1
3	Test 2
4	Graded Lab Assignments
5	Discussion (in-class participation)
6	Project Report 2
7	Project Report 3

**b. Cognitive Skills****(i) Cognitive skills to be developed****(ii) Teaching strategies to be used to develop these cognitive skills.****(iii) Methodes of assessment of student's cognitive skills.**

**c. Interpersonal Skills and Responsibility**

**(i) Description of the interpersonal skills and capacity to carry responsibility to be developed.**

**(ii) Teaching strategies to be used to develop these skills and abilities**

**(iii) Methods of assessment of student's interpersonal skills and capacity to carry responsibility**

**d. Communication, Information Technology and Numerical Skills.**

**(i) Description of the skills to be developed in this domain.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's numerical and communication skills.**

**e. Psychomotor Skills (if applicable)**

**(i) Description of the psychomotor skills to be developed and level of performance required.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's psychomotor skills.**

## 5 - Schedule of Assessment Tasks for Students During the Semester

Assessment	Assessment task (eg. essay, test, group project, examination, etc)	Week due	Proportion of final Assessment
1	Final Exam		40
2	Test 1		25
3	Test 2		20
4	Graded Lab Assignments		10
5	Discussion (in-class participation)		1
6	Project Report 2		2
7	Project Report 3		2

### D. Student Support

**1 - Arrangements for availability of faculty for individual student consultations and academic advice. (include amount of time faculty are available each week)**

### E. Learning Resources

<b>1 - Required Text(s).</b> Stallings, "Cryptography and Network Security: Principles and Practice (International Edition)", Pearson Education; 3 edition (1 Aug 2002) ISBN-13 9780131115026 ISBN-10 0131115022
<b>2 - Essential References</b> Stallings, "Cryptography and Network Security: Principles and Practice (International Edition)", Pearson Education; 3 edition (1 Aug 2002) ISBN-13 9780131115026 ISBN-10 0131115022
<b>3 - Recommended Books and Reference Material (Journals, Reports, ets) (Attach List)</b>
<b>4 - Electronic Materials, Web Sites etc.</b>
<b>5 - Other Learning material such as computer-based programs/CD, professional standards/regulations</b>

### F. Facilities Required

<b>Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)</b>
<b>1. Accommodation (Lecture rooms, laboratories, etc.)</b>
<b>2. Computing resources</b>
<b>3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)</b>

## **G . Course Evaluation and Improvement Processes**

<b>1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching</b>
<b>2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department</b>
<b>3 Processes for Improvement of Teaching</b>
<b>4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)</b>
<b>5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.</b>



# Course Specification

Institution	King Abdulaziz University
College / Department	Faculty of Computing and Information Technology / Information Technology

## A - Course Identification and General Information

<b>1 - Course Title and code:</b>
Needs Assessment and Technology Evaluation / CPIT-435
<b>2 - Credit hours:</b>
3
<b>3 - Program in which the course is offered:</b>
B.S.Information Technology
<b>4 - Name of Faculty member responsible for the course</b>
Mr. Muhammad Ishaq
<b>5 - Level/year at which this course is offered</b>
Senior - 400
<b>6 - Co-requisites for this course (if any)</b>
<b>7 - Pre-requisites for this course (if any)</b>
CPIT-340
<b>8 - Location if not offered in main campus</b>
Boys - Sulimania , Girls - Sulimania , Girls - Faisalialia , Boys - North Jeddah , Girls - North Jeddah

## B - Objectives

<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>
1 Identify the latest developments in the IT field.
2 Develop a periodic practical plan and to analyze the organization's needs and how to meet them.
3 Learn different ways of gathering information.
4 Conduct effective personal interviews.
5 Analyze the results of gathering information stage and defining the appropriate technical solutions.
6 Develop technical solutions into practice and conduct periodic maintenance and development follow-up.
7 Describe the special information requirements of an enterprise-sized corporation.
8 Identify information systems used in the functional units of an enterprise.
9 Identify general purpose and integrated information systems used throughout an enterprise.

<b>1 - Summary of the main learning outcomes for students enrolled in the course</b>	
10	Identify types of technologies used throughout an enterprise.
11	Describe the major types of e-commerce.
12	Identify the computer hardware needs and solutions for an enterprise.
13	Determine why computer backup is important and how it is accomplished.
14	Identify the steps in a disaster recovery plan.
15	Define what an IT project is and describe its attributes.
16	Define the discipline called project management.
17	Describe the role and impact IT projects have on an organization.
18	Identify the different roles and interests of project stakeholders.
19	Describe the project life cycle, the systems development life cycle and their relationship.
20	Explain the socio-technical, project management and knowledge management approaches that support ITPM.
<b>2 - Briefly describe any plans for developing and improving the course that are being implemented.</b>	

**C - Course Description** ( Note: General description in the form to be used for the Bulletin or Handbook should be attached)

<b>1 - Topics to be Covered:</b>
Methods of identifying the organizations needs (personal interviews – work flow and related documents) Types of the questions expected in the personal interviews and train students with needed skills how to identify and assess appropriate technology to meet the needs of the business How to follow up, make changes, and find updated technical solutions with the development and renewal requirements in the future

<b>2 - Course components (total contact hours per semester):</b>			
Lecture:	Tutorial:	Practical/Fieldwork/Internship	Other
3	1	0	

<b>3 - Additional private study/learning hours expected for students per week. (This should be an average for the semester not a specific requirement in each week):</b>

<b>4 - Development of Learning Outcomes in Domains of Learning</b>
For each of the domains of learning shown below indicate:
- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.
<b>a. Knowledge</b>
<b>(i) Description of the knowledge to be acquired</b>
Introduction
Software Engineering Basics
Software planning , reports and enterprise computing
Research report-1

#### 4 - Development of Learning Outcomes in Domains of Learning

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.

##### a. Knowledge

###### Quiz 1

Networking and Operating System Basics

Business Process and I.T management system

Web Technologies , Data warehousing and Web security

System virtualization and System Utilities

###### Quiz-2

I.T needs Assessment

Research report - 2

##### (ii) Teaching strategies to be used to develop that knowledge

###### Lectures

Instructor will teach the topics of the course emphasizing on the course related learning objectives through three fifty minutes lecture meetings per week. Lectures will, in most cases, have a mix of formal lecturing and active learning.

###### Tutorials

During the tutorials (one 80 minutes meeting per week), the instructor will solve example problems related to the recently introduced topic. The instructor will also discuss with the students the problems they faced while trying to solve the assigned homework problems. Some of the tutorials are devoted for training the students on software packages and tools needed in the course.

###### Projects

A number of projects are assigned throughout the semester. The projects involve topics that require the use of provided software tools, simulation experiments, and the implementation of theoretically studied issues. Students are grouped in teams, each of 4 students. Each team should submit report and give a presentation of their work.

##### (iii) Methods of assessment of knowledge acquired

1	Final Exam
2	Midterm Exam 1
3	Midterm Exam 2
4	Quiz 1
5	Quiz 2
6	Lab Test
7	Research Report
8	Research Report

##### b. Cognitive Skills

##### (i) Cognitive skills to be developed

##### (ii) Teaching strategies to be used to develop these cognitive skills.

##### (iii) Methodes of assessment of student's cognitive skills.

**c. Interpersonal Skills and Responsibility**

**(i) Description of the interpersonal skills and capacity to carry responsibility to be developed.**

**(ii) Teaching strategies to be used to develop these skills and abilities**

**(iii) Methods of assessment of student's interpersonal skills and capacity to carry responsibility**

**d. Communication, Information Technology and Numerical Skills.**

**(i) Description of the skills to be developed in this domain.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's numerical and communication skills.**

**e. Psychomotor Skills (if applicable)**

**(i) Description of the psychomotor skills to be developed and level of performance required.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's psychomotor skills.**

## 5 - Schedule of Assessment Tasks for Students During the Semester

Assessment	Assessment task (eg. essay, test, group project, examination, etc)	Week due	Proportion of final Assessment
1	Final Exam		40
2	Midterm Exam 1		15
3	Midterm Exam 2		15
4	Quiz 1		2.5
5	Quiz 2		2.5
6	Lab Test		20
7	Research Report		2.5
8	Research Report		2.5

### D. Student Support

1 - Arrangements for availability of faculty for individual student consultations and academic advice. (include amount of time faculty are available each week)

### E. Learning Resources

<b>1 - Required Text(s).</b> Schwalbe, "Information Technology Project Management", Course Technology, 4th Edition, 2005 ISBN-13 9780619215262 ISBN-10 0619215267
<b>2 - Essential References</b> Schwalbe, "Information Technology Project Management", Course Technology, 4th Edition, 2005 ISBN-13 9780619215262 ISBN-10 0619215267
<b>3 - Recommended Books and Reference Material (Journals, Reports, ets) (Attach List)</b>
<b>4 - Electronic Materials, Web Sites etc.</b>
<b>5 - Other Learning material such as computer-based programs/CD, professional standards/regulations</b>

### F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)
<b>1. Accommodation (Lecture rooms, laboratories, etc.)</b>
<b>2. Computing resources</b>
<b>3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)</b>

## **G . Course Evaluation and Improvement Processes**

<b>1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching</b>
<b>2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department</b>
<b>3 Processes for Improvement of Teaching</b>
<b>4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)</b>
<b>5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.</b>

# Course Specification

Institution	King Abdulaziz University
College / Department	Faculty of Computing and Information Technology / Information Technology

## A - Course Identification and General Information

<b>1 - Course Title and code:</b>
Software Engineering (II) / CPIT-455
<b>2 - Credit hours:</b>
3
<b>3 - Program in which the course is offered:</b>
B.S.Information Technology
<b>4 - Name of Faculty member responsible for the course</b>
Dr. Rizwan Jamil Quraishi
<b>5 - Level/year at which this course is offered</b>
Senior - 400
<b>6 - Co-requisites for this course (if any)</b>
<b>7 - Pre-requisites for this course (if any)</b>
CPIT-251
<b>8 - Location if not offered in main campus</b>
Boys - Sulimania , Girls - Sulimania , Girls - Faisalia , Boys - North Jeddah , Girls - North Jeddah

## B - Objectives

<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>
1 Examine the concept of software processes.
2 Identify about three main OO models and the criteria for their usage.
3 Learn and implement main activities of OO SDLC in planning, analysis, design and implementation.
4 Examine how RUP model integrates good software engineering practices to develop high quality software.
5 Learn how an iterative, incremental software development approach leads to faster delivery of more useful software.
6 Examine the differences between heavy weight and agile models.
7 Identify the principles, practices, advantages and disadvantages of eXtreme Programming Model.
8 Examine the solution of main problems of software engineering field.
9 Examine the basics of conformation and authentication in software engineering.

<b>1 - Summary of the main learning outcomes for students enrolled in the course</b>	
10	Learn and implement main methods and tools of software testing.
11	Build and manage teams of software developments.
12	Examine the fundamentals of software costing.
13	Appreciate why a range of techniques are used for software cost estimations.
14	Identify the basic concepts of quality management in software development.
15	Learn possess development Skills in software production.
16	Examine the management restructuring in software production.
17	Examine the quality management process.
18	Examine the importance of standards in the quality management process.
19	Define of current limitations of software measurements.
20	Learn about different types of maintenance and the factors that affect maintenance cost.
21	Define of the processes involved in software evolution including re-engineering and its types.
<b>2 - Briefly describe any plans for developing and improving the course that are being implemented.</b>	

**C - Course Description** ( Note: General description in the form to be used for the Bulletin or Handbook should be attached)

<b>1 - Topics to be Covered:</b>
Software engineering confirmation and authentication, Methods and ways of software testing Building and managing software development teams Scientific and practical methods for calculating the costs of software development Quality management in software development, Processes Development in software production Reconstruction management in software production

<b>2 - Course components (total contact hours per semester):</b>			
Lecture:	Tutorial:	Practical/Fieldwork/Internship	Other
3	1	0	

<b>3 - Additional private study/learning hours expected for students per week. (This should be an average for the semester not a specific requirement in each week):</b>

<b>4 - Development of Learning Outcomes in Domains of Learning</b>
For each of the domains of learning shown below indicate:
<ul style="list-style-type: none"> <li>- A brief summary of the knowledge or skill the course is intended to develop;</li> <li>- A description of the teaching strategies to be used in the course to develop that knowledge or skill;</li> <li>- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.</li> </ul>
<b>a. Knowledge</b>
<b>(i) Description of the knowledge to be acquired</b>
Software OO Process Models



#### 4 - Development of Learning Outcomes in Domains of Learning

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.

##### a. Knowledge

Communication & Planning

Modeling

Construction

Software Quality Management

Software Reconstruction

Fundamentals of Software Engineering

##### (ii) Teaching strategies to be used to develop that knowledge

###### Lectures

Instructor will teach the topics of the course emphasizing on related course learning outcomes (CLOs), while student will take notes and read the text book.

At the end of each week, students will have to submit a Lecture Diary related to the topics covered in that week. These Lecture diaries are a sort of feedback from the student to know the difficulties they are facing and a way to enhance the method of delivery of the Lectures.

###### Term projects

Scope:

These projects aim to improve student's:

Technical thinking

Team work

Development skills

Internet searching skills

Presentation and reporting skills

Method:

Two parts: Part I- Part II

Part I: Group Project

i. In this part every group will learn what is Java Versata technology for an OO development using three tier architecture with its advantages and disadvantages.

ii. In this part every group will learn reengineering tool i.e., Rational Rose for reverse engineering and forward engineering using OO development with its advantages and disadvantages.

Deliveries:

Each group is asked to submit a report about both parts of assignment and give a 5-7 minutes power-point presentation

###### Application Group Project

Each group of three members will develop a software project using an OO tool such as Java Net beans or Microsoft.Net or PHP following an agile model.

Deliveries:

Each student is asked to submit a report about the output of SDLC phases and there is a presentation of each student about 5-7 minutes.

###### ATTENDENCE and class participation

Your regular attendance will enhance your final grades

###### Quizzes

There will be two Quizzes. These Quizzes have no weight in the overall assessment, However it does contribute to revise the material covered.

##### (iii) Methods of assessment of knowledge acquired

1	Final Exam
2	Midterm Exam 1

**4 - Development of Learning Outcomes in Domains of Learning**

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.

**a. Knowledge****(iii) Methods of assessment of knowledge acquired**

3	Midterm Exam 2
4	Quiz 1
5	Quiz 2
6	Project Report
7	Research Report

**b. Cognitive Skills****(i) Cognitive skills to be developed****(ii) Teaching strategies to be used to develop these cognitive skills.****(iii) Methodes of assessment of student's cognitive skills.****c. Interpersonal Skills and Responsibility****(i) Description of the interpersonal skills and capacity to carry responsibility to be developed.****(ii) Teaching strategies to be used to develop these skills and abilities****(iii) Methods of assessment of student's interpersonal skills and capacity to carry responsibility**

**d. Communication, Information Technology and Numerical Skills.**

**(i) Description of the skills to be developed in this domain.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's numerical and communication skills.**

**e. Psychomotor Skills (if applicable)**

**(i) Description of the psychomotor skills to be developed and level of performance required.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's psychomotor skills.**

**5 - Schedule of Assessment Tasks for Students During the Semester**

Assessment	Assessment task (eg. essay, test, group project, examination, etc)	Week due	Proportion of final Assessment
1	Final Exam		40
2	Midterm Exam 1		20
3	Midterm Exam 2		20
4	Quiz 1		2.5
5	Quiz 2		2.5
6	Project Report		10
7	Research Report		5

## D. Student Support

**1 - Arrangements for availability of faculty for individual student consultations and academic advice. (include amount of time faculty are available each week)**

## E. Learning Resources

### 1 - Required Text(s).

Sommerville, "Software Engineering", Addison Wesley; 7 edition (3 Jun 2004)  
ISBN-13 9780321210265 ISBN-10 0321210263

### 2 - Essential References

Sommerville, "Software Engineering", Addison Wesley; 7 edition (3 Jun 2004)  
ISBN-13 9780321210265 ISBN-10 0321210263

### 3 - Recommended Books and Reference Material (Journals, Reports, ets) (Attach List)

### 4 - Electronic Materials, Web Sites etc.

### 5 - Other Learning material such as computer-based programs/CD, professional standards/regulations

## F. Facilities Required

**Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)**

**1. Accommodation (Lecture rooms, laboratories, etc.)**

**2. Computing resources**

**3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)**

## G . Course Evaluation and Improvement Processes

**1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching**

**2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department**

**3 Processes for Improvement of Teaching**

**4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)**

**5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.**

# Course Specification

Institution	King Abdulaziz University
College / Department	Faculty of Computing and Information Technology / Information Technology

## A - Course Identification and General Information

<b>1 - Course Title and code:</b>	Software Economics / CPIT-456
<b>2 - Credit hours:</b>	3
<b>3 - Program in which the course is offered:</b>	B.S.Information Technology
<b>4 - Name of Faculty member responsible for the course</b>	Dr. Rizwan Jamil Quraishi
<b>5 - Level/year at which this course is offered</b>	Senior - 400
<b>6 - Co-requisites for this course (if any)</b>	
<b>7 - Pre-requisites for this course (if any)</b>	CPIT-251
<b>8 - Location if not offered in main campus</b>	Boys - Sulimania , Girls - Sulimania , Girls - Faisalia , Boys - North Jeddah , Girls - North Jeddah

## B - Objectives

<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>
1 Learn economic characteristics in the process of building software and how to measure and deal with them.
2 Learn the requirements of choosing development team work.
3 Examine processes and procedures related to the software development for the economic side.
4 Familiarize with the economics and scale of operations and improvement restricted to operations and procedures.
5 Examine the principles of COCOMO I and COCOMO II for software cost estimation.
6 Examine and employ the full models for the software development and the ability to employ them.
7 Examine the spiral model of software development and how to use it in the process of software development.
8 Analyze and face the risks associated with the process of building software.
9 Learn the principle tasks of software project managers.
10 Examine why the nature of software makes software project management more difficult than other engineering project

<b>1 - Summary of the main learning outcomes for students enrolled in the course</b>	
11	Learn needs for project planning in all software projects.
12	Learn how graphical representations (Bar and activity charts) can be used by the project managers.
13	Learn how to measure the project velocity.
14	Examine some of the issues involved in selecting and retaining staff in a software development company.
15	Examine the factors that influence individual motivation and their implication for software project managers.
16	Examine key issues of team working, including team composition, team cohesiveness, team communication and team organization.
17	Learn the structure of People Capability Maturity Model- a model that is a framework for enhancing the capability of software engineering in an organization.
18	Learn the principles of software process improvement.
19	Learn how software process factors influence software quality.
20	Choose to develop simple models of software processes.
<b>2 - Briefly describe any plans for developing and improving the course that are being implemented.</b>	

**C - Course Description** ( Note: General description in the form to be used for the Bulletin or Handbook should be attached)

<b>1 - Topics to be Covered:</b>
<p>Important economic concepts in the process of software development Building software development team and empowering Them Continuous improvement of procedures in building software process Production tasks in the process of applications development Economies of scale operations related to software development Optimizing Restricted operations and cost estimation to build software Models of integrated operations, Spiral model to build software and risk management in building software</p>

<b>2 - Course components (total contact hours per semester):</b>			
Lecture:	Tutorial:	Practical/Fieldwork/Internship	Other
3	1	0	

<b>3 - Additional private study/learning hours expected for students per week. (This should be an average for the semester not a specific requirement in each week):</b>

<b>4 - Development of Learning Outcomes in Domains of Learning</b>
For each of the domains of learning shown below indicate:
<ul style="list-style-type: none"> <li>- A brief summary of the knowledge or skill the course is intended to develop;</li> <li>- A description of the teaching strategies to be used in the course to develop that knowledge or skill;</li> <li>- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.</li> </ul>
<b>a. Knowledge</b>
<b>(i) Description of the knowledge to be acquired</b>
<p>Project Planning Process  Empirical Estimations  Software Scope, feasibility and appraisal</p>

#### 4 - Development of Learning Outcomes in Domains of Learning

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.

##### a. Knowledge

Software Risk Management

Software Scheduling

People, Process and Project Metric

Software Process Improvement

##### (ii) Teaching strategies to be used to develop that knowledge

###### Lectures

Instructor will teach the topics of the course emphasizing on related course learning outcomes (CLOs), while student will take notes and read the text book.

At the end of each week, students will have to submit a Lecture Diary related to the topics covered in that week. These Lecture diaries are a sort of feedback from the student to know the difficulties they are facing and a way to enhance the method of delivery of the Lectures.

Students will take two exams (Excluding the Final exam) at a pre-announced time. Each exam will be discussed in class to highlight on the common mistakes that have been appeared in the answer sheets. At the end of each Exam, The Student will be informed of the correct answers by posting the answer key on fcit.kau.edu.sa website.

At the end of the semester there will be one major final exam that would cover all the main topics of the course.

###### Term projects

Scope:

These projects aim to improve student's:

Technical thinking

Team work

Internet searching skills

Presentation and reporting skills

Method:

Two parts: Part I- Part II

Part I: Group Project

In this part every group will learn what are main parameters of CK metric and implement the CK metric for an OO development with its advantages and disadvantages.

Deliveries:

Each group is asked to submit a report about CK metric and give a 7-minute power-point presentation. In this presentation, the following questions are expected to be answered:

What is the purpose of the CK metric?

How the CK metric is implemented for OO development? (this must be supported with graphical aid)

What are the advantages and disadvantages of the CK metric?

Part II: Group Project

Comparison of COCOMO I and COCOMO 2 with its advantages and disadvantages

Deliveries:

Each student is asked to submit a report (between 6 to 10 pages). This report should cover following points:

What are main modes of COCOMO I and II

Compare COCOMO I and II with an example

###### Attendance and class participation

Your regular attendance will enhance your final grades.

When your absence exceeds the 25 % limit (~ 10 sessions), a report will be sent to the Academic Affairs to take the necessary action. As a result, you may get DN or AF in the course.

###### Quizzes

There will be two Quizzes before selected classes. These Quizzes have no weight in the overall assessment, However it does contribute to revise the material covered.

**4 - Development of Learning Outcomes in Domains of Learning**

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.

**a. Knowledge****(iii) Methods of assessment of knowledge acquired**

1	Final Exam
2	Midterm Exam
3	Midterm Exam
4	Quiz 1
5	Quiz 2
6	Research Report
7	Research Report

**b. Cognitive Skills****(i) Cognitive skills to be developed****(ii) Teaching strategies to be used to develop these cognitive skills.****(iii) Methodes of assessment of student's cognitive skills.****c. Interpersonal Skills and Responsibility****(i) Description of the interpersonal skills and capacity to carry responsibility to be developed.****(ii) Teaching strategies to be used to develop these skills and abilities****(iii) Methods of assessment of student's interpersonal skills and capacity to carry responsibility**



**d. Communication, Information Technology and Numerical Skills.**

**(i) Description of the skills to be developed in this domain.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's numerical and communication skills.**

**e. Psychomotor Skills (if applicable)**

**(i) Description of the psychomotor skills to be developed and level of performance required.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's psychomotor skills.**

**5 - Schedule of Assessment Tasks for Students During the Semester**

<b>Assessment</b>	<b>Assessment task (eg. essay, test, group project, examination, etc)</b>	<b>Week due</b>	<b>Proportion of final Assessment</b>
1	Final Exam		40
2	Midterm Exam		20
3	Midterm Exam		20
4	Quiz 1		2.5
5	Quiz 2		2.5
6	Research Report		5
7	Research Report		10

## D. Student Support

**1 - Arrangements for availability of faculty for individual student consultations and academic advice. (include amount of time faculty are available each week)**

## E. Learning Resources

### 1 - Required Text(s).

Pfleeger, "Software Cost Estimation and Sizing Methods, Issues, and Guidelines", RAND Corporation, 1st Edition, 2005  
ISBN-13 9780833037138 ISBN-10 0833037137

### 2 - Essential References

Pfleeger, "Software Cost Estimation and Sizing Methods, Issues, and Guidelines", RAND Corporation, 1st Edition, 2005  
ISBN-13 9780833037138 ISBN-10 0833037137

### 3 - Recommended Books and Reference Material (Journals, Reports, ets) (Attach List)

### 4 - Electronic Materials, Web Sites etc.

### 5 - Other Learning material such as computer-based programs/CD, professional standards/regulations

## F. Facilities Required

**Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)**

### 1. Accommodation (Lecture rooms, laboratories, etc.)

### 2. Computing resources

### 3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)

## G . Course Evaluation and Improvement Processes

### 1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching

### 2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department

### 3 Processes for Improvement of Teaching

**4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)**

### 5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.

# Course Specification

Institution	King Abdulaziz University
College / Department	Faculty of Computing and Information Technology / Information Technology

## A - Course Identification and General Information

<b>1 - Course Title and code:</b>	Networks Administration / CPIT-470
<b>2 - Credit hours:</b>	3
<b>3 - Program in which the course is offered:</b>	B.S.Information Technology
<b>4 - Name of Faculty member responsible for the course</b>	Mr. Akbar Badhusha Mohideen
<b>5 - Level/year at which this course is offered</b>	Senior - 400
<b>6 - Co-requisites for this course (if any)</b>	
<b>7 - Pre-requisites for this course (if any)</b>	CPIT-370
<b>8 - Location if not offered in main campus</b>	Boys - Sulimania , Girls - Sulimania , Girls - Faisalia , Boys - North Jeddah , Girls - North Jeddah

## B - Objectives

<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>	
1	Demonstrate the ability to configure network devices and apply IP addresses
2	Describe the functions and role of a router and the structure of the routing table
3	Examine how packets get forwarded when using static and default routes.
4	Identify how to manage and troubleshoot static routes.
5	Describe the role and classification of Dynamic routing protocols and place these protocols in the context of modern network design
6	Describe how the metrics are used by the routing protocols and identify the metric types used by the dynamic routing protocols
7	Determine the administrative distance of a route and describe its importance in the routing process
8	Identify the different elements in the routing table
9	Devise and apply subnetting schemes for given realistic constraints
10	Identify the characteristics and types of distance vector routing protocols.
11	Describe the network discovery process of distance vector routing protocols using Routing Information Protocol (RIP).
12	Describe the processes for maintaining accurate routing tables that are used by distance vector routing protocols.
13	Identify the conditions leading to a routing loop and explain the implications for router performance.
14	Describe the functions characteristics, limitations and the operation of RIPv1, RIPv2 and OSPF protocols

<b>1 - Summary of the main learning outcomes for students enrolled in the course</b>	
15	Configure, verify, and troubleshoot default routes propagated in a routed network implementing RIPv1, RIPv2 and OSPF
16	Use recommended techniques to solve problems related to RIPv1, RIPv2 and OSPF.
17	Apply the basic Routing Information Protocol Version 2 (RIPv2) configuration commands and evaluate RIPv2 classless routing updates.
18	Analyze router output to see RIPv2 support for VLSM and Classless Inter-Domain Routing (CIDR).
19	Configure, verify, and troubleshoot RIPv1, RIPv2 and OSPF.
20	Compare and contrast classful and classless IP addressing
21	Review VLSM and explain the benefits of classless IP addressing
22	Describe the role of Classless Inter Domain Routing (CIDR) standard in making efficient use of scarce IPv4 addresses
23	Describe the various route types found in the routing table structure, the route lookup process and the routing behavior in routed networks
24	List the basic features, benefits and requirements of link-state routing protocols.
25	Describe the Designated Router/Backup Designated Router(DR/BDR) election process in multi-access networks
26	Describe the functions of each of the three levels of the hierarchical network design model, the principles of hierarchical network design (aggregate connectivity, network diameter, and redundancy), and the concept of a converged network.
27	Select appropriate devices to operate at each level of the hierarchy, including voice and video components.
28	Explain the functions that enable a switch to forward Ethernet frames in a LAN.
29	Configure basic configuration and basic security on a switch that will operate in a network designed to support voice, video, and data transmissions.
30	Explain the role of VLANs and trucking in a network.
31	Configure, verify and troubleshoot VLANs on the switches in a network topology.
32	Describe the role and operation of VTP including domains, modes and advertisements.
33	Configure VTP on the switches in a converged network.
34	Explain how the STP algorithm uses three steps to converge on a loop-free topology.
35	Configure and troubleshoot inter-VLAN routing on a router to enable communication between end-user devices on separate VLANs.
<b>2 - Briefly describe any plans for developing and improving the course that are being implemented.</b>	

**C - Course Description** ( Note: General description in the form to be used for the Bulletin or Handbook should be attached)

<b>1 - Topics to be Covered:</b>
Topics include: Network OSI Layers and CISCO IOS Configuring Devices ,IP addressing and Subnetting , Introduction to Routing , Static Routing, Default Routing , Dynamic Routing ,RIP1 and RIP2, Troubleshooting , Routing Table lookup Process ,OSPF , Switching & switch configuration , Switch security , VLANs , Spanning tree protocol, VTP , Inter VLAN Routing ,Network troubleshooting

<b>2 - Course components (total contact hours per semester):</b>			
Lecture:	Tutorial:	Practical/Fieldwork/Internship	Other
3	1	0	

<b>3 - Additional private study/learning hours expected for students per week. (This should be an average for the semester not a specific requirement in each week):</b>

<b>4 - Development of Learning Outcomes in Domains of Learning</b>
For each of the domains of learning shown below indicate: <ul style="list-style-type: none"> <li>- A brief summary of the knowledge or skill the course is intended to develop;</li> <li>- A description of the teaching strategies to be used in the course to develop that knowledge or skill;</li> <li>- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.</li> </ul>

#### 4 - Development of Learning Outcomes in Domains of Learning

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.

##### a. Knowledge

###### (i) Description of the knowledge to be acquired

Network OSI Layers and CISCO IOS Configuring Devices

IP addressing and Subnetting

Introduction to Routing

Static Routing, Default Routing

Dynamic Routing

RIP1 and RIP2, Troubleshooting

Routing Table lookup Process

OSPF

Switching & switch configuration

Switch security

VLANs

Spanning tree protocol, VTP

Inter VLAN Routing

Network troubleshooting

###### (ii) Teaching strategies to be used to develop that knowledge

###### Lectures

- Instructor will teach the topics of the course emphasizing on related course learning objectives (CLOs), while student will take notes and read in the text book.
- Student learning outcomes will be measured by homework assignments, Midterm Exam, Lab exercises, lab project, and final exam
- At the end of each chapter, students will have a quiz related to the topics of each chapter. These quizzes will fulfill some of the CLOs.
- Student will be informed by the correct answers of taken exams to insure that the learning objectives are fulfilled.
- Students will take a mid-term exam at a pre-announced time. The exam will be discussed in class to high light on the common mistakes that have been appeared in the answer sheets
- At the end of the semester there will be one major final exam that would cover all the main topics of the course

###### Labs

- During each of the Lab session, one topology will be taken and the students are asked to configure the topology. Some difficult problems will be selected and solved by the instructor.
- Students will be divided into teams to do the lab exercise. Instructor will guide the students during the lab session.
- Lab quizzes are given to assess their practical skills throughout the semester.
- There will be a lab exam at the end of the semester to assess their skills.

###### Lab project

- There is a lab project given during the middle of the semester. This project covers almost all the topics covered in the semester.
- Students will be divided into teams (3 to 4 students per team), each team will be asked to submit a report for lab project at a pre-announced time.

###### Attendance

- Regular attendance of the students will enhance their final grades.
- When the absence exceeds the 25 % limit (~ 10 sessions), a report will be send to the Academic Affairs to take the necessary action. As a result, the student may get DN or AF in the course.

###### (iii) Methods of assessment of knowledge acquired

1	Final Exam
2	Midterm Exam 1

**4 - Development of Learning Outcomes in Domains of Learning**

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.

**a. Knowledge****(iii) Methods of assessment of knowledge acquired**

3	Midterm Exam 2
4	Quiz
5	Lab Tests
6	Lab Exercise
7	Lab Project
8	Lab Final Practical Exam

**b. Cognitive Skills****(i) Cognitive skills to be developed****(ii) Teaching strategies to be used to develop these cognitive skills.****(iii) Methodes of assessment of student's cognitive skills.****c. Interpersonal Skills and Responsibility****(i) Description of the interpersonal skills and capacity to carry responsibility to be developed.****(ii) Teaching strategies to be used to develop these skills and abilities****(iii) Methods of assessment of student's interpersonal skills and capacity to carry responsibility**

**d. Communication, Information Technology and Numerical Skills.**

**(i) Description of the skills to be developed in this domain.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's numerical and communication skills.**

**e. Psychomotor Skills (if applicable)**

**(i) Description of the psychomotor skills to be developed and level of performance required.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's psychomotor skills.**

**5 - Schedule of Assessment Tasks for Students During the Semester**

Assessment	Assessment task (eg. essay, test, group project, examination, etc)	Week due	Proportion of final Assessment
1	Final Exam		30
2	Midterm Exam 1		15
3	Midterm Exam 2		15
4	Quiz		10
5	Lab Tests		5
6	Lab Exercise		5
7	Lab Project		10
8	Lab Final Practical Exam		10

## D. Student Support

**1 - Arrangements for availability of faculty for individual student consultations and academic advice. (include amount of time faculty are available each week)**

## E. Learning Resources

### 1 - Required Text(s).

Amant and P. Zemliansky, "Internet-Based Workplace Communications: Industry and Academic Applications", Information Science Publishing, 2004  
ISBN-13 9781591405221 ISBN-10 159140522X

### 2 - Essential References

Amant and P. Zemliansky, "Internet-Based Workplace Communications: Industry and Academic Applications", Information Science Publishing, 2004  
ISBN-13 9781591405221 ISBN-10 159140522X

### 3 - Recommended Books and Reference Material (Journals, Reports, ets) (Attach List)

### 4 - Electronic Materials, Web Sites etc.

### 5 - Other Learning material such as computer-based programs/CD, professional standards/regulations

## F. Facilities Required

**Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)**

**1. Accommodation (Lecture rooms, laboratories, etc.)**

**2. Computing resources**

**3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)**

## G . Course Evaluation and Improvement Processes

**1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching**

**2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department**

**3 Processes for Improvement of Teaching**

**4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)**

**5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.**



# Course Specification

Institution	King Abdulaziz University
College / Department	Faculty of Computing and Information Technology / Information Technology

## A - Course Identification and General Information

<b>1 - Course Title and code:</b>	Wireless Data Networks / CPIT-475
<b>2 - Credit hours:</b>	3
<b>3 - Program in which the course is offered:</b>	B.S.Information Technology
<b>4 - Name of Faculty member responsible for the course</b>	Dr. Ahmad Muhammad Barnawi
<b>5 - Level/year at which this course is offered</b>	Senior - 400
<b>6 - Co-requisites for this course (if any)</b>	
<b>7 - Pre-requisites for this course (if any)</b>	CPIT-370
<b>8 - Location if not offered in main campus</b>	Boys - Sulimania , Girls - Sulimania , Girls - Faisalia , Boys - North Jeddah , Girls - North Jeddah

## B - Objectives

<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>
1 Compare the bandwidth characteristics of several types of physical communication media.
2 Analyze the physical challenges inherent in wireless-fixed and wireless-mobile communication channels.
3 Compare and contrast methods of error detection and correction for wireless communication.
4 Describe how most modern communication standards are developed, addressing both de jure and de facto standards.
5 Choose the appropriate compression methodology [ lossy or lossless] for a given type of application.
6 Compare and contrast t he advantages and disadvantages of satellite communication.
7 Calculate the link budget for a given satellite link.
8 Compare and Contrast the characteristics of LAN, WAN and MAN technologies.
9 Differentiate between various switching methods such as FDM, TDM, Circuit switching and Packet Switching.
10 Describe how Packet switching works.
11 Analyze TCP/IP layers and OSI Model.
12 Distinguish various propagation antennas and describe their respective characteristics.
13 Compare the basic characteristics of signal encoding techniques used in communications, such as FM, PM and PAM.
14 Contrast the FHSS and DSSS
15 Describe IEEE 802.11 Wireless standard.
16 Comprehend IEEE 802.11 Architecture with all details.

**1 - Summary of the main learning outcomes for students enrolled in the course**

17 Describe Bluetooth techniques, application, standard and Architecture.

**2 - Briefly describe any plans for developing and improving the course that are being implemented.**

**C - Course Description** ( Note: General description in the form to be used for the Bulletin or Handbook should be attached)

**1 - Topics to be Covered:**

“Wireless Networks” is a potential course for a student to pursue a more responsible role in IT Infrastructure, Networking and System Admin in information Technology filed. Topics include Cellular Architecture, GSM, GPRS, UMTS, 802.11 WLAN Infrastructure Designing, Planning and Administration.

**2 - Course components (total contact hours per semester):**

Lecture:	Tutorial:	Practical/Fieldwork/Internship	Other
3	1	0	

**3 - Additional private study/learning hours expected for students per week. (This should be an average for the semester not a specific requirement in each week):**

**4 - Development of Learning Outcomes in Domains of Learning**

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.

**a. Knowledge**

**(i) Description of the knowledge to be acquired**

Introduction to Cellular Networks  
Transmission Fundamentals  
Antennas and Propagation  
Signal Encoding Techniques  
Spread Spectrum  
Coding and Error Control  
Convolutional Codes  
Satellite Communication  
Cellular Network Architecture  
Second Generation (GSM) Network  
Third Generation (UMTS) Network  
Wireless LAN  
Wi-Fi and IEEE 802.11 Standard  
Bluetooth and IEEE 802.15 Standard

#### 4 - Development of Learning Outcomes in Domains of Learning

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.

##### a. Knowledge

###### (ii) Teaching strategies to be used to develop that knowledge

###### Lecture

Instructor will teach the topics of the course emphasizing on related course learning objectives (CLOs), while student will take notes and read in the text book.

Student learning outcomes will be measured by Term project, Exams, Lecture Diaries, mid-term and final exam

At the end of each week, students will have to submit a Lecture Diary related to the topics covered in that week. These Lecture Diaries will fulfill Most of the CLOs.

Student will be informed by the correct answers of taken exams to insure that the learning objectives are fulfilled.

Students will be divided into teams (3 to 4 students per team), each team will be asked to submit a report for design project (Term Project) at a pre-announced time.

Students will take two exams (Excluding the Final exam) at a pre-announced time. Each exam will be discussed in class to highlight on the common mistakes that have been appeared in the answer sheets.

At the end of the semester there will be one major final exam that would cover all the main topics of the course

###### Labs

During the Labs session, Exercise Questions from the book, Case Studies, Home Works and Some problems will be given to the students related to the Topics covered in a particular Week.

Students will be divided into teams; each team will present the solution of some homework problem. Instructor will guide the students during the Labs session.

Students will be exposed to the practicalities in different up-to-date Information technologies.

Students will learn by doing in the Labs. The following Two activities are the Major elements of the Labs.

###### ATTENDENCE

Your regular attendance will enhance your final grades.

When your absence exceeds the 25 % limit (~ 10 sessions), a report will be send to the Academic Affairs to take the necessary action. As a result, you may get DN or AF in the course

###### Quizzes

There will be three Quizzes before selected classes. These Quizzes have no weight in the overall assessment, However it does contribute to revise the material covered.

###### (iii) Methods of assessment of knowledge acquired

1	Final Exam
2	Midterm Exam 1
3	Midterm Exam 2
4	Lab Test
5	Quizzes
6	Lab Paper
7	Technical Visit

##### b. Cognitive Skills

###### (i) Cognitive skills to be developed

###### (ii) Teaching strategies to be used to develop these cognitive skills.

###### (iii) Methodes of assessment of student's cognitive skills.

**c. Interpersonal Skills and Responsibility**

**(i) Description of the interpersonal skills and capacity to carry responsibility to be developed.**

**(ii) Teaching strategies to be used to develop these skills and abilities**

**(iii) Methods of assessment of student's interpersonal skills and capacity to carry responsibility**

**d. Communication, Information Technology and Numerical Skills.**

**(i) Description of the skills to be developed in this domain.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's numerical and communication skills.**

**e. Psychomotor Skills (if applicable)**

**(i) Description of the psychomotor skills to be developed and level of performance required.**

**(ii) Teaching strategies to be used to develop these skills.**

**(iii) Methods of assessment of student's psychomotor skills.**

## 5 - Schedule of Assessment Tasks for Students During the Semester

Assessment	Assessment task (eg. essay, test, group project, examination, etc)	Week due	Proportion of final Assessment
1	Final Exam		30
2	Midterm Exam 1		15
3	Midterm Exam 2		15
4	Lab Test		10
5	Quizes		15
6	Lab Paper		10
7	Technical Visit		5

## D. Student Support

**1 - Arrangements for availability of faculty for individual student consultations and academic advice. (include amount of time faculty are available each week)**

## E. Learning Resources

<b>1 - Required Text(s).</b> Stallings, "Wireless Communications and Networks", Prentice Hall, 2nd Edition, 2004 ISBN-13 9780131918351 ISBN-10 0131918354
<b>2 - Essential References</b> Stallings, "Wireless Communications and Networks", Prentice Hall, 2nd Edition, 2004 ISBN-13 9780131918351 ISBN-10 0131918354
<b>3 - Recommended Books and Reference Material (Journals, Reports, ets) (Attach List)</b>
<b>4 - Electronic Materials, Web Sites etc.</b>
<b>5 - Other Learning material such as computer-based programs/CD, professional standards/regulations</b>

## F. Facilities Required

<b>Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)</b>
<b>1. Accommodation (Lecture rooms, laboratories, etc.)</b>
<b>2. Computing resources</b>
<b>3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)</b>

## **G . Course Evaluation and Improvement Processes**

<b>1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching</b>
<b>2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department</b>
<b>3 Processes for Improvement of Teaching</b>
<b>4. Processes for Verifying Standards of Student Achievement (eg. check marking by an independent faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)</b>
<b>5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.</b>

# Course Specification

Institution	King Abdulaziz University
College / Department	Faculty of Computing and Information Technology / Information Technology

## A - Course Identification and General Information

<b>1 - Course Title and code:</b>	Selected Topics in IT / CPIT-490
<b>2 - Credit hours:</b>	3
<b>3 - Program in which the course is offered:</b>	B.S.Information Technology
<b>4 - Name of Faculty member responsible for the course</b>	Mr. Mohammad Fazil Ali
<b>5 - Level/year at which this course is offered</b>	Senior - 400
<b>6 - Co-requisites for this course (if any)</b>	
<b>7 - Pre-requisites for this course (if any)</b>	
<b>8 - Location if not offered in main campus</b>	Boys - Sulimania , Girls - Sulimania , Girls - Faisalia , Boys - North Jeddah , Girls - North Jeddah

## B - Objectives

<b>1 - Summary of the main learning outcomes for studentss enrolled in the course</b>	
1	Describe how Network infrastructure is managed by Network Operating Systems.
2	Compare various Network Operating Systems
3	Evaluate the history of Microsoft Network Operating Systems.
4	Summarize Microsoft Windows 2003 server and Active Directory.
5	Describe how to install VMware work station 6.5 on any laptop or pc with WindowsXP/Vista/Windows7
6	Describe how to Install first Stand alone Windows 2003 server standard edition to be used as first master image of the server for all lab exercises by making redundant copies from master image.
7	Illustrate DNS in first server in the farm of server to prepare it as first DC or root Domain Controller and steps of Domain Controller promotion by using "DCPROMO" command and Installation of Active Directory Service.
8	Contrast both logical and physical Structures of Active Directory such as Domain, Forest, Tree, OUnd Domain Controller, Sites.
9	Describe the necessity of redundant Domains in a Forest.
10	Illustrate steps to add additional Domains, Sub-Domains into existing root Domain and Forest.
11	Compare the role of Global Catalog server in a multi Domain environment.
12	Define and describe Active Directory as an implementation of LDAP version3.
13	Describe LDAP functionality as client/server messaging protocol.
14	Compare LDAP Standards Data Model, Naming Model, Functional Model, Security Model

<b>1 - Summary of the main learning outcomes for students enrolled in the course</b>	
15	Describe the purpose of an Organizational Unit and Compare its benefits.
16	Plan an Organizational Structure using Organizational Units hierarchy.
17	Describe an Organizational Structure inheritance.
18	Practice the Publishing of Printers and Shared Folders in Active Directory.
19	Compare Group Policy Settings, Group Policy Objects, Group Policy Inheritance.
20	Discuss Group Policy Implementation, Creating GPOs, Linking GPOs, Administrative Templates.
21	Summarize GPOs Management in Active Directory environment.
<b>2 - Briefly describe any plans for developing and improving the course that are being implemented.</b>	

**C - Course Description** ( Note: General description in the form to be used for the Bulletin or Handbook should be attached)

<b>1 - Topics to be Covered:</b>
<p>“System Administration” is a potential course for a student to pursue a more responsible role in IT Infrastructure, Networking and System Admin in information Technology filed. Topics include Microsoft Windows Server 2003 Charlie Administration with Active Directory as single point of complete Network Management and Administration.</p>

<b>2 - Course components (total contact hours per semester):</b>			
Lecture:	Tutorial:	Practical/Fieldwork/Internship	Other
3	1	0	

<b>3 - Additional private study/learning hours expected for students per week. (This should be an average for the semester not a specific requirement in each week):</b>

<b>4 - Development of Learning Outcomes in Domains of Learning</b>
<p>For each of the domains of learning shown below indicate:</p> <ul style="list-style-type: none"> <li>- A brief summary of the knowledge or skill the course is intended to develop;</li> <li>- A description of the teaching strategies to be used in the course to develop that knowledge or skill;</li> <li>- The methods of students assessment to be used in the course to evaluate learning outcomes in the domain concerned.</li> </ul>
<b>a. Knowledge</b>
<p><b>(i) Description of the knowledge to be acquired</b></p> <p>Introduction to Network Operating System  The Benefits of Active Directory  LDAP3 Protocol  Active Directory Installation  Active Directory Forest and Trees  FSMO Roles  Sites and Replication Management  Active Directory Administration  Publishing Active Directory Objects  Active Directory Security  Group Policy Objects  Software Deployment</p>



#### 4 - Development of Learning Outcomes in Domains of Learning

For each of the domains of learning shown below indicate:

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5	Attendance and class participation
6	Technical Visit

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