KOMAR UNIVERSITY OF SCIENCE AND TECHNOLOGY
(KUST)

COURSE SYLLABUS SOFTWARE DEVELOPMENT			
Course Title	**Software Development**		
Course Code	**ECO3410**	**No. of Credits**	**4**
Department	**Information Management**	**College**	**Business**
Pre-requisites Course Code	**Intro to CMP**	**Co-requisites Course Code**	
Course Coordinator(s)			
Email	**Hothefa.shaker@komar.edu.iq**	**IP No.**	**117**
Other Course Teacher(s)/Tutor(s)			
Class Hours	**10:00 am to 12:00 pm Sunday and Tuesday**		
Contact Hours	**9:00 am to 10:00 am and 2:00 to 4:00 pm Sunday and Tuesday**		
Course Type	**☐University course ☐College course ■Department course ☐ Elective**		
Offer in Academic Year	**Spring 2015**		

COURSE DESCRIPTION

Student will learn the concepts of software development and application. Review decision structures: if, if-else, switch. The loop constructs: while repetition statement, nested control structures, increment and decrement structures.

COURSE OBJECTIVES

Understand the basic concepts of software development method and application of software. Prepare programs using structured design. Perform problem solving skills. Understand the basic syntax and concepts of programming language and data types. Create, test and debug C programs. Solving business problem using programming language.

COURSE LEARNING OUTCOMES

After participating in the course, students would be able to:

1. Understand the concepts of software development. (D)
2. Identify the parts of the computer system and software development methods. (D)
3. formulate and solve business problems faced in system and software development. (C)
4. Design an algorithmic solution for a given problem (C)
5. Generate C program for simple applications for business using array, mathematics and structures. (H & C)

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GUIDELINES ON GRADING POLICY

Points	Percentage Scores	Grade
A	95–100	4.0
A-	90-94	3.7
B+	87–89	3.3
B	83-86	3.0
B-	80-82	2.7
C+	75–79	2.3
C	70-74	2.0
C-	65-69	1.7
D+	60–64	1.3
D	55-59	1.0
D-	50-54	0.7
F	0–49	0
I	Incomplete Course Work	
W	Official Withdrawal	

Note: The minimum passing grade to pass this course is C- which is equivalent to 65%.

COURSE CONTENT

Chapter 1:	Introduction to Software development (1)
Chapter 2:	Software Development Models (1 & 2)
Chapter 3:	Introduction to Computer and Programming (2 & 3)
Chapter 4:	A Problem Solving and Algorithm (3)
Chapter 5:	Fundamentals of Programming Language & Input/ Output (4)
Chapter 6:	Array (4 & 5)
Chapter 7:	Character and Strings (5)
Chapter 8:	Object Oriented Programming (5)

COURSE TEACHING AND LEARNING ACTIVITIES

Course Teaching and Learning Activities: (short description)

1. Student will be taking a short-sided assessment consisting of 3-4 questions from the week worth of lessons. They will be given the first 15 minutes of class every week.
2. Interactive class discussion
3. Hands-on exercises.
4. Lab programming
5. Assignments/projects.
6. Tests.
7. All students will be given the opportunity to earn extra credit points throughout the semester. However, the extra credit offered will not exceed one full letter grade of the student's total grade for the quarter.

COURSE ASSESSMENT Tools	
Assessment Tool	**Weight**
ESSENTIAL READINGS: (Journals, textbooks, website addresses etc.)	
Assignments/projects	15%
Quizzes	15%
Lab	15%
Midterm	15 %
Test #	10%
Final Exam	30%

Textbooks:

Introduction to Software Development
· **Author(s)** J. Pérez López and L. Ribas i Xirgo
· **Publisher**: Free Technology Academy - Fundació per a la UniversitatOberta de Catalunya (February, 2010)
· Language: English-

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References:

1. Problem Solving & Program Design in C – Addison Wesley 3rd addition H.H. Tan,HanlyKoffman – T.B. D'Orazio.

2. C Programming for Engineering & Computer Science, McGraw-Hil.

3. The C Programming Language by Brian W. Kernighan, Dennis M. Ritchie, 1998.

COURSE POLICY *(including plagiarism, academic honesty, attendance etc)*

Classroom Expectations Policy

Students are expected to come to class on time and expected and attend each class for the entire semester. Students are responsible for material presented in lectures. Students should prepared and ready to work. Students are to respect each other and their property. Students are expected to be responsible for their work – making sure all assignments are turned in on time. Students are not permitted to eat or drink in the classroom.

Attendance is taken at the beginning of each class. Only students with official KUST absences, family

crises, and illness are excused from class. Three occasions of lateness count as one absence. The student who misses 10 percent of the course classes will be placed on probation. **Class attendance will be part of the final grade.**

Make-up Policy

Since all examinations are announced in advance, **zero grade** will be given to any missed examination unless a student has an acceptable reason such as illness (MUST bring MC), for not being able to take the examination during **all** those days when the examination was announced.

Homework Policy

Students are expected to complete homework to be turned in the next day of class at the beginning of the period. (unless otherwise specified) The homework must be headed with name, date, and the problems assigned. Late work will be accepted only one day late, and the student will receive partial credit at that time.

Students must be prepared in case to present homework problems on the board the next day.
Copying of homework will result in an automatic **0.**

Academic Dishonesty

Students who violate university standards of academic integrity are subject to disciplinary sanctions, including failure in the course and further punishment by the University Consul.

GUIDELINES FOR SUCCESS

Be Responsible

1. Be on time and be prepared with daily material, completed assignments and prepared questions
2. Follow the student Code of Conduct, and always act with academic honesty*

Be Respectful

1. Speak kindly to others
2. Listen quietly to others
3. Understand that others may have different opinions

Be Ready to Learn

1. Arrive on time and bring your supplies to class every day
2. Keep food out of sight/no sharing

3. Electronics should be stowed and in the off position during class

Course calendar: Please check the academic calendar for fall2014

Note: Supplementary problems will be given either as homework or hands on exercises during the class, two different of solutions need to be done :

1- Hard Copy of the program/flowchart.
2- Softcopy has been executed .CPP with black screen of result.

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Week	Beg/End Dates	Topics (Chapters)	Course objectives per chapter
1	28/02/2016	1. Introduction to Software development. • Computer hardware components • Computer software components – operating systems, compiler, interpreter, editor, application	
	3/03/2016	• Software Applications • Software—New Categories • Legacy Software	**Ad for the Project**
2	6/03/2016	2. Software life-cycle management Software Development Models • Waterfall Model • Incremental Model • RAD Model	
	10/03/2016	• Prototyping Model • Spiral Model	
3	13/03/2016	3. Introduction to Computer and Programming • Introduction of the application interface.	Quiz 1
	17/03/2016	• Compiler, interpreter, editor • Application Programming	
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4	27/03/2016	• Languages – machine language, assembly, high level • programming language, C language	Quiz 2
	31/03/2016	• C programming environment Steps for creating, compiling and executing a program • Sample C program Data Types • Data types and variables • Numerical data types • Arithmetic operations • String data type	Assignment #1
5	3/ 04/2016	4.A Problem Solving (Part I) • Software development method • Specification of needs	**Project 1 Review**
	7/ 04/2016	• B- Problem Solving (Part II) • Problem analysis	
6	10/04/2016	• Design and algorithm representation – flowchart, pseudocode • Program planning and algorithms	Quiz 3

		• Implementation	
	14/04/2016	• Control Structure in algorithms • Pseudocode and flowchart • Converting algorithm to programming codes	
7	17/04/2016	Control Structure (cont) • Program planning and algorithms	
	21/04/2016	• Pseudocode and flowchart Converting algorithm to programming codes	Assignment #2
Midterm			
8	1/05/2016	• Input and output data validation • Common errors in programming	Test #1
	5/05/2016	• Error messages • Debugging statements	Project #2
9	8/05/2016	• Testing and verification • Program documentation	
	12/05/2016	5. Fundamentals of Programming Language & Input/ Output • A simple program example	Lap Quiz 4
10	15/05/2016	• character set and tokens – reserved words, identifiers, constants, string literals, punctuators, operators	
	19/05/2016	• Program structure - comments, preprocessor directives, data types and type declarations, named constants, statements, compound statements • Standard Input-Output functions in C	Assignment #4
11	22/05/2016	• Basic C operators Arithmetic operators Assignment operators Equalities and relational operators Logical operators Conditional operators	Lap Quiz 3
	26/05/2016	6. Array • Concept of arrays – why, how, advantages Array declaration and initialization	
12	29/05/2016	• Array declaration • Array initialization • Assigning values to array elements	

	2/06/2016	• Reading values from array elements Relationship with pointers Operation on arrays • Simple Searching Simple Sorting	
13	5/06/2016	7. Character and Strings • ASCII character set • Fundamentals of the processing of strings • Data representation, character set	Assignment #5 Test #2
	16/06/2016	• Character handling library String handling library String conversion functions	
14	12/06/2016	8.Object Oriented Programming • Introduction to OOP • Structures declaration, structure variables declaration	
	16/06/2016	• Nested structures • Referencing structure members • Initializing structure variables	
15	**Study week**		
16	**FINAL EXAM**		