



King Fahd University of Petroleum & Minerals
College of Computer Sciences and Engineering
Information and Computer Science Department

ICS 101: Computer Programming (2-3-3)

Syllabus – Spring Semester 2010-2011 (092)

Website: Blackboard (WebCT): <http://webcourses.kfupm.edu.sa>

Class Time, Venue and Instructor Information:

Sec.	Time	Venue	Instructor	Office Hours
05	SM 13:10-14:00	24-236A	Dr. MUHAMMED AL-MULHEM (Course Coordinator) Office: 22-323 Phone: 4216 E-mail: mulhem@kfupm.edu.sa	SM 10:00am – 11:00am UT 09:00am – 10:00am
13	SM 11:00-11:50	59-1005		
01	SM 07:00-07:50	24-236A	Mr. ESAM MLAIH (Course Co-Coordinator) Office: 22-321 Phone: 7749 E-mail: mlaih@kfupm.edu.sa	SMW 11:00am – 12:00pm UT 08:00am – 09:00am
09	SM 09:00-09:50	24-112		
08	UT 09:00-09:50	22-132	Mr. AHMED BAQAIS Office: 23-062 Phone: 3588 E-mail: bagais@kfupm.edu.sa	UT 08:00am – 09:00am UT 10:00am – 11:00am
14	UT 07:00-07:50	22-132		
54	W 14:10-17:10	23-017		
62	S 08:00-10:50	23-017		
64	U 11:00-14:00	7-137		
03	SM 08:00-08:50	24-108	Mr. MUHAMMAD ASLAM Office: 23-054 Phone: 3980 E-mail: mwaslam@kfupm.edu.sa	SM 11:00am – 12:00pm UT 08:00am – 09:00am
11	SM 10:00-10:50	24-178		
07	UT 14:10-15:00	24-114	Mr. AMIN AL-HASHIM Office: 23-080 Phone: 2483 E-mail: alhasha@kfupm.edu.sa	TBA
55	U 08:00-10:50	23-017		
59	U 11:00-14:00	23-017		
61	T 11:00-14:00	23-017		
65	M 14:10-17:10	7-137		

Sec.	Time	Venue	Instructor	Office Hours
02	UT 07:00-07:50	24-112	Mr. ALI AL-YOUSEF Office: 16-136 Phone: 2994 E-mail: akyousef@kfupm.edu.sa	S 10:00am – 10:50am UT 09:00am – 09:50am M 11:00am – 11:50am
04	UT 08:00-08:50	24-255		
06	UT 13:10-14:00	22-134		
10	UT 10:00-10:50	22-130		
12	UT 11:00-11:50	24-146		
56	M 08:00-10:50	23-017		
58	S 11:00-14:00	23-017		
51	S 14:10-17:10	14-256	Mr. AHMED ALHERZ Office: 23-080 Phone: 2287 E-mail: alherz@kfupm.edu.sa	SU 01:00pm – 02:00pm
52	U 14:10-17:10	7-137		
57	W 08:00-10:50	23-017		
60	W 11:00-14:00	23-017		
53	T 14:10-17:10	7-137	Mr. KHWAJA AHMED Office: TBA Phone: TBA E-mail: khwaja@kfupm.edu.sa	TBA
63	T 08:00-10:50	23-017	Mr. RAED SHAMMAS Office: TBA Phone: TBA E-mail: raedsh@kfupm.edu.sa	TBA

Course Catalog Description

An overview of the computer system, its main components and their functions. Introduction to Programming in FORTRAN 77 with emphasis on a modular and structured problem solving approach that includes program coding, algorithm design, debugging and testing. Various programming problems will be illustrated as examples in the class. Note: ICS 101 cannot be taken by ICS/SWE students.

Co-requisites: MATH 101 or MATH 132

Course Objectives

- To provide engineering students with basic knowledge of programming and problem solving using FORTRAN 77.

Course Learning Outcomes

Upon completion of the course, you should be able to:

1. Understand and find the output of simple FORTRAN 77 programs that incorporate different types of variables, expressions (arithmetic and logical), assignment statements, input and output statements and selection constructs.
2. Understand and find the output of more complex FORTRAN 77 programs containing iteration, arrays and invoking (calling) subprogram having input and output arguments.
3. Design and implement simple programs using basic syntax of FORTRAN 77 language such as expressions, assignment statements, input and output statements, and selection constructs.
4. Practice modular programming by developing more complex FORTRAN 77 programs made of iterations, subprograms passing data between them using arrays, input, and output arguments.

Lab Learning Outcomes

Upon completion of the lab, you should be able to:

1. Comprehend theoretical concepts through practical examples.
2. Strengthen programming capabilities in the construction of software systems of varying complexity.
3. Enhance teamwork and communication skills.
4. Engage in continuing professional development.

Required Material

- Introduction to Computer Programming using FORTRAN 77, Second Edition by Al-Dhaher, et, al. KFUPM Press, 1995.
- Lecture and Lab Handouts

Other Recommended References

- FORTRAN 77 for Engineers and Scientists with an Introduction to FORTRAN 90 (4th Edition) (Paperback) by Larry Nyhoff, et, al. 1996.

Assessment Plan

Assessment Tool	Weight
Lab: Lab assignments 8%, Lab Project 5%, 4 Lab quizzes 12%	25%
Major Exam I (Thursday, March 25th 2010)	20%
Major Exam II (Thursday, May 13th 2010)	25%
Final Exam (comprehensive)	30%

Tentative Schedule

Wk#	Lecture			Lab	
	Covered Topics	Readings	Other Activities	Topics	Other Activities
1	Overview of Computers and Software	Ch1		Lab0: Introduction to Windows & FORTRAN Compiler I	
	Overview of FORTRAN				
2	Data Types	Ch2		Lab1: Introduction to Windows & FORTRAN Compiler II	
	Arithmetic Expressions				
3	Logical Expressions	Ch2		Lab2: Arithmetic Operations	
	Assignment, Input and Output				
4	IF Structure	Ch3	Hw1 Assigned	Lab3: Logical Operations	
5	Functions	Ch4	Exam I	Lab4: IF Structure	Lab Quiz1
	Problem Solving Session				
Major Exam I (Thursday, March 25th 2010)					
6	Solutions of Exam I	Ch4		Lab5: Functions	
	Functions				
7	Subroutines	Ch4	Hw2 Assigned	Lab6: IF & Functions	
8	Do Loops	Ch5		Lab7: Subroutines	Lab Quiz 2
9	While Loops	Ch5	Hw3 Assigned	Lab8: Do Loops	Lab project announced
10	1-D Arrays	Ch6		Lab9: While Loops	
11	File Processing	Ch8	Exam II	Lab10: 1-D Arrays	Lab Quiz 3

	Problem Solving Sessions				
Major Exam II (Thursday, May 13th 2010)					
12	Solutions of Exam II	Ch7		Lab11: 1-D Arrays	
	File Processing				
13	2-D Arrays	Ch7	Hw4 Assigned	Lab12: File Processing	Lab Quiz 4
	2-D Arrays				
14	Output Design	Ch8		Lab13: 2-D Array	
15	Review				
Final Exam (Date/Time/Venue as announced by the Registrar's Office)					

Course Policies

- **Labs:** Lectures and labs are integrated and they complement each other. To pass this course, the student must pass the lab-component of the course. The requirements for the lab project will be discussed in the lab.
- **Course Website & Participation:** Students are required to periodically check the course website and download course material as needed. Several resources will be posted through the website as well. Keys to quizzes and exams are generally discussed during class as time permits but solutions may not be posted. WebCT will be used for communication and interaction, posting and submitting assignments, posting grades, posting sample exams, etc. It is expected that you get benefit of the discussion board by raising questions or answering questions put by others.
- **Attendance:** Regular attendance is a university requirement; hence attendance will be checked at the beginning of each lecture and lab. Late arrivals will disrupt the lecture/lab sessions. Hence, two late attendances -in lectures or labs- will be considered as one absence. Missing more than 6 course hours (e.g. more than 6 lectures or 2 labs, or combination of both that is greater than 6 hours) without official excuse will result in a DN grade without prior warning. To avoid being considered absent, an official excuse must be shown no later than one week of returning to classes. Every unexcused absence leads to a loss of 0.5% of total grade.
- **No makeup of homework, quizzes or exams will be given.**
- **Re-grading policy:** If you have a complaint about any of your grades, discuss it with the instructor no later than a week of distributing the grades (except for the final). Only legitimate concerns on grading should be discussed.

- **Office Hours:** Students are encouraged to use the office hours to clarify any part of the material that is not clear; however the instructor will only provide hints if it is an assigned task but not solve it.
- **Academic honesty:** Students are expected to abide by all the university regulations on academic honesty. Cheating will be reported to the Department Chairman and will be severely penalized. Although collaboration and sharing knowledge is highly encouraged, copying others' work without proper citation, either in part or full, is considered plagiarism. Whenever in doubt, review the university guidelines or consult the instructor. Cheating in whatever form will result in F grade.
- **Courtesy:** Students are expected to be courteous toward the instructor and their classmates throughout the duration of this course. Talking while someone else is speaking will not be tolerated. Furthermore, all cell phones must be turned off during class and exams. In addition, students are expected to be in class on time. More importantly, you are not allowed to leave the class unless it is an urgent matter. To contact your instructor, please use email through WebCT whenever possible and avoid using phone calls or written notes.

☺☺☺ **Best luck!!** ☺☺☺