King Fahd University of Petroleum and Minerals Department of Information and Computer Science ICS 313-03: Fundamentals of Programming Languages (3-0-3) First Semester 2006-2007 (061)

Instructor: Mr. Faisal Alvi

Office Hours: 10:15 – 11: 15AM(SMW)

(Or by appointment)

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Course Page: <u>http://www.ccse.kfupm.edu.sa/~alvi/ICS313061</u>

Catalog Description:

Concepts of Programming Languages: Syntax and semantics, Data types, Control structures, Subprograms, Exception handling, Run-time storage management. Programming paradigms: Imperative, functional, logical, object-oriented and concurrent

Course Objectives:

Upon completing this course the students should be able to:

1.outline the history and describe the rationale of different programming languages.

2.describe grammar and syntax specifications and analyze their implementations.

3.describe, analyze and use the various mechanisms in procedural languages; e g. data types, scope, control structures subprograms, etc.

4.describe and use the major programming paradigms: Object-Oriented, Functional and Logical.

Textbook: *Concepts of Programming Languages*, By. R. Sebesta, 6th Ed, Addison Wesley, 2004.

Grading Policy:

Tests (6)	25%
Test 01 – 20 th September 2006	
Test 02 – 7 th October 2006	
Test 03 – 4 th November 2006	
Test 04 – 25 th November 2006	
Test 05 – 9 th December 2006	
Test 06 – 12 th January 2006	
Assignments (4 x 5%)	20%
Assignment 01 (25 th September – 9 th October 2006)	
Assignment 02 (13 th November – 27 th November 2006)	
Assignment 03 (2 nd December – 16 th December 2006)	
Assignment 04 (Active Learning – Dates: TBD)	
Midterm Exam (14 th November 2006)	25%

Important Notes:

- 1. Attendance is taken at the beginning of the class. A 0.25 mark will be deducted for every absence.
- 2. Missing **nine** classes or more will result in a **DN** grade in the course.
- 3. Official excuse for any absence of a class must be presented not later than a week after that class.
- 4. All assignments must be submitted on the due date. No late submission is allowed.
- 5. No make up for exams or any other class work will be made.
- **6.** Plagiarism, copying and other anti-intellectual behavior are prohibited by the university regulations. Violators may have to face serious consequences.

Course Outline

Topic	Chapter	# Of Lectures
1. Preliminaries	1	2
2. Evolution of the Major Programming languages	2	Self Reading
3. Describing Syntax and Semantics	3	4
4. Imperative Paradigm: C Programming	Notes	5
5. Functional Programming: Scheme Programming	15, Notes	6
6. Logic Programming: Prolog	16, Notes	6
7. Names, Bindings, Type Checking and Scopes	5	3
8. Data Types	6	3
9. Expressions and the Assignment Statements	7	2
10. Statement-Level Control Structure	8	2
11. Subprograms	9	4
12. Implementing Subprograms	10	4
Total No. Of Lectures		41

Tips to the Student:

In order to do well in this course the following points are to be noted and considered in your planning:

- This course has both a theoretical component as well as a practical part. Doing well in both is required in order to succeed in this course.
- Regular class attendance is important but even more important is regular study of class material and regular submission of assignments as well as preparation for tests. The course material changes swiftly from one topic to another so if you are not able to study the material for a few classes you will also find it extremely difficult to comprehend the current material.
- Group study and interaction with other students will also be beneficial to your understanding of the course (provided the your fellow student(s) is/are also as interested in studying as you are).
- Good luck and best wishes for a good semester.