

King Fahd University of Petroleum and Minerals  
*Department of Information and Computer Science*  
**ICS 535-01(051)**  
**Design and Implementation of Programming Languages**

**Instructor:** Dr. Mamdouh M. Najjar **Office:** 14-204 **Phone:** 1400 **Mobile:** 0505821661

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**Office Hour:** S.M. 7:50 - 8:30 PM or by appointment

**Class Time:** S.M. 6:30 - 7:45 PM **Location:** 22-119

**Catalog Description:**

**ICS 535 Design and Implementation of Programming Languages (3-0-3)**

Principles of functional, imperative, object-oriented and logic programming languages. Semantic specification including axiomatic, operational and denotational semantics. Fundamentals of type systems such as abstract data types, polymorphism, and inference. Concurrent systems. Case studies of contemporary programming languages.

**Prerequisite:** ICS 313 or Equivalent

**Textbook:** *Programming Languages Design and Implementation*, Fourth Edition, by Terrence W. Pratt and Marvin V. Zelkowitz, Prentice Hall, (2001) ISBN: 0-13-027678-2.

**Companion Website:** <http://cwx.prenhall.com/bookbind/pubbooks/pratt/>

Part I:	Language Design and Implementation Issues
	Chapter 1 Language Design Issues
	Chapter 2 Impact of Machine Architecture
	Chapter 3 Language Translation Issues
Part II:	Programming Languages
	Functional LISP
	Imperative FORTRAN
	Object-Oriented Java
	Logic Prolog
Part III:	Semantic Specification
	Chapter 4 Modeling Language Properties
Part IV:	Type System
	Chapter 5 Elementary Data Types
	Chapter 6 Encapsulation
	Chapter 7 Inheritance
Part V:	Concurrent Systems
	Chapter 11 Distributed Processing
	Chapter 12 Network Programming

**Grading Policy:**

Literature Survey	15%
P.L. Design + Presentation	10%
P.L Implementation	25%
Mid-term Exam	20% Oct. 15, 2005 (Class Time)
Final Exam	30%

**Important notes:**

- 1- Check WebCT course site for news and instructions
- 2- Attendance to class is required.
- 3- Missing six classes will result in a DN grade in the course.
- 4- Grades are final one week after the graded materials are returned to you.
- 5- No make up for exams or any other class work.
- 6- Check your course performance with me before the withdrawal deadlines.