Spring 2005

CS 884: Advanced Topics in Programming Languages

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CS 884 Advanced Topics in Programming Languages

- **Instructor:** T. K. Prasad
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- **Home Page**: http://www.cs.wright.edu/~tkprasad

- **Quarter:** Spring, 2005
- **Class Hrs:** Tu Th, 6:05 to 7:20pm, 134 Health Sciences
- **Office Hrs:** Tu Th, 5:30 to 6pm and 7:30 to 8pm, 337 RC (or by appointment)

Course Objectives

- To analyze, design, and specify modern programming languages.

Prerequisite

- CS 784 Programming Languages **OR**
- CS 780 Compiler Design and Construction I

Course Description

The primary focus of this course is the design and specification of the Object-Oriented language **Java**.

Course Load

The course load includes a term-paper and presentation worth 15 points, programming assignments worth 25 points, a midterm worth 30 points, and a final worth 30 points. Exams are typically open book.

Texts

- David Flanagan, Brett McLaughlin: Java 5.0 Tiger: A Developer's Notebook, June 2004, ISBN: 0-596-00738-8.
- David Flanagan: Java in a Nutshell, 5th Edition, March 2005, ISBN: 0-596-00773-6.
- J. Gosling, B. Joy, G. Steele, and G. Bracha: The Java Language Specification. 3rd Ed. (online)
- Bill Venners: Inside the Java 2 Virtual Machine, McGraw-Hill, 2000. `ISBN 0-07-135093-4.`

References

- K. Arnold, J. Gosling, and D. Holmes: The Java Programming Language. 3rd Ed., Addison-Wesley, 2000. `ISBN 0-201-70433-1`
- J. Engel: Programming for the Java Virtual Machine, Addison-Wesley, 1999. `ISBN 0-201-30972-6`
- T. Lindholm and F. Yellin: The JavaTM Virtual Machine Specification. 2nd Ed., Addison-Wesley, 1999. `ISBN`

0-201-43294-3

Relevant Websites

- Java 5 Core APIs
- The Java Tutorial
- Research on Java Implementation
- Java Tools

Grading

The letter grades will be assigned using the following scale: A[90-100], B[80-90), C[70-80), D[60-70), and F[0-60). However, I reserve the right to adjust the scale somewhat to utilize the gaps in the distribution.

Attendance Policy

All registered students are expected to attend all lectures. In case a student is absent from a lecture due to unavoidable circumstances, the student is still responsible for the material covered in the class, as it is typically available from the course web-page well in advance. Furthermore, the student is expected to find out about in-class announcements from their colleagues/instructor.

Class Schedule and Syllabus

	Topic
Class 0	The Aesthetics of Simplicity
Class 1	Motivation for Formal Semantics
Class 2	Java: Design Goals
Class 3	Java Constructs ; Examples
Class 4	Values, Variables, and Types
Class 5	(cont'd)
Class 6	Names : Scope, Access; Packages
Class 7	(cont'd)
Class 8	Classes : Inheritance, Polymorphism
Class 9	(cont'd)
Class 10	**Midterm** (April 28)
Class 11	Interfaces; Exceptions
Class 12	Expressions; Statements; Finalization
Class 13	Concurrent Programming with Threads
Class 14	(cont'd)
Class 15	Java Virtual Machine
Class 16	(Oak IR (ps) (pdf)) (GC)
Class 17	Inner classes and Reflection ; Examples
Class 18	Presentation
Class 19	Presentation

Class 20 Presentation
Finals (June 9, 8 - 10pm)

Assignments (`Spring 05`)

- Assignment 1.
- Assignment 2.

Exams (`Spring 03`)

- Midterm.
- Final.

T. K. Prasad (21 Mar 2005)