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Spring 2008

### CS 884: Advanced Topics in Programming Languages

Krishnaprasad Thirunarayan

*Wright State University - Main Campus*, [t.k.prasad@wright.edu](mailto:t.k.prasad@wright.edu)

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# CS 884 Advanced Topics in Programming Languages

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- **Instructor:** T. K. Prasad
  - **Phone No.:** (937)-775-5109
  - **Email:** [t.k.prasad@wright.edu](mailto:t.k.prasad@wright.edu)
  - **Home Page:** <http://www.cs.wright.edu/~tkprasad>
  
  - **Quarter:** Spring, 2008
  - **Class Hrs:** MW, 6:05 to 7:20pm, A 230 (Creative Arts)
  - **Office Hrs:** MW, 3 to 4pm, 395 Joshi (or by appointment)
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## Course Objectives

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

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

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

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## Course Load

The course load includes a term-paper and presentation worth 20 points, programming assignments worth 30 points, a midterm worth 20 points, and a final worth 30 points. Exams are typically open book.

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## Texts

- J. Gosling, B. Joy, G. Steele, and G. Bracha: The Java Language Specification. 3rd Ed. (online), Addison Wesley, 2005, ISBN-10: 0321246780.
- Bill Venners: Inside the Java 2 Virtual Machine, McGraw-Hill, 2000. ISBN 0-07-135093-4.

## References

- David Flanagan, Brett McLaughlin: Java 5.0 Tiger: A Developer's Notebook, O'Reilly, June 2004, ISBN: 0-596-00738-8.
- David Flanagan: Java in a Nutshell, 5th Edition, March 2005, O'Reilly, ISBN: 0-596-00773-6.
- K. Arnold, J. Gosling, and D. Holmes: The Java Programming Language. 4th Ed., Addison-Wesley, 2005. ISBN-10: 0321349806
- J. Engel: Programming for the Java Virtual Machine, Addison-Wesley, 1999. ISBN 0-201-30972-6
- T. Lindholm and F. Yellin: The Java™ Virtual Machine Specification. 2nd Ed., Addison-Wesley, 1999. ISBN 0-201-43294-3

## Relevant Websites

- [Java 6 Core APIs](#)
- [The Java Tutorial](#)

## 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

	<b>Topic</b>
<b>Class 0</b>	<u>The Aesthetics of Simplicity</u>
<b>Class 1</b>	<u>Motivation for Formal Semantics</u>
<b>Class 2</b>	<u>Java: Design Goals</u>
	<u>Java Constructs ; Examples ; Java 5</u>
<b>Class 3</b>	<u>Values, Variables, and Types</u>
<b>Class 4</b>	<u>(cont'd)</u>
<b>Class 5</b>	<u>Names : Scope, Access; Packages</u>
<b>Class 6</b>	<u>(cont'd)</u>
<b>Class 7</b>	<u>Classes : Inheritance, Polymorphism</u>

<b>Class 8</b>	<u>(cont'd)</u>
<b>Class 9</b>	<b>Midterm</b>
<b>Class 10</b>	<u>Interfaces; Exceptions</u>
<b>Class 11</b>	<u>Expressions; Statements; Finalization</u>
<b>Class 12</b>	<u>Concurrent Programming with Threads</u>
<b>Class 13</b>	<u>(cont'd)</u>
<b>Class 14</b>	<u>Java Virtual Machine</u> <u>(Oak IR (pdf)) (GC)</u>
<b>Class 15</b>	<u>Inner classes and Reflection ; Examples</u>
<b>Class 16</b>	Presentation
<b>Class 17</b>	Presentation
<b>Class 18</b>	Presentation
<b>Class 19</b>	Presentation
<b>Class 20</b>	Presentation
	<b>Final</b>

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## Assignments ( Spring 2008 )

- Assignment 1.
  - Assignment 2.
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## Sample Exams ( old )

- Midterm.
  - Final.
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*T. K. Prasad ( 26 Mar 2008 )*