

**COURSE SYLLABUS**

<b>Unique#</b>	<b>Day &amp; Time</b>	<b>Bldg &amp; Room</b>	<b>Final Examination Date &amp; Time</b>
56605	MW 4:00-5:30 pm	PHR 2.114	To Be Announced in Class

	<b>Instructor</b>	<b>Teaching Assistant</b>
<b>Name:</b>	Dr. Greg Lavender	Mr. Julian Bishop
<b>Office/Hours:</b>	PAI 5.72B / MW 2:30-3:30 pm or by appointment.	To Be Announced
<b>Phone:</b>	Campus: 512.471.9577 Mobile: 512.947.7420	
<b>E-mail:</b>	lavender@cs.utexas.edu	julian@cs.utexas.edu
<b>Newsgroup:</b>	utexas.class.cs345-lavender	
<b>Website:</b>	<a href="http://www.cs.utexas.edu/~lavender/courses/cs345">http://www.cs.utexas.edu/~lavender/courses/cs345</a>	

**Course Objective:** This course is an in-depth survey of the fundamental concepts underlying modern programming languages. This course is an interesting course because it brings together many of the concepts and skills that you have learned in your courses up to this point in the Computer Science major and applies them in the context of programming languages. The emphasis is on identifying common syntactic and semantic programming language constructs and features, examining their manifestation in specific programming languages, and understanding the similarities and differences that arise in pragmatic language implementations. The programming paradigms that will be studied include: *procedural/imperative*, *functional/applicative*, *object-oriented*, and *concurrent*. The representative language features we will study are drawn from ANSI C, C++, Java, Scheme, Haskell and/or SML, and Python.

**Prerequisites:** The following courses, or their equivalents, with a grade of at least C are **required** prerequisites: CS310(H), CS336(H), and M408D. If you have not taken these courses, or received equivalent credit, you may be automatically dropped from this course. Please see a CS Department advisor if you do not satisfy the prerequisites. If you have taken this course before, you must have departmental permission to take it again.

**Textbooks:** **The following textbooks are required:**

*Programming Languages: Principles and Paradigms, 2<sup>nd</sup> Edition*, by Allen B. Tucker & Robert E. Noonan, McGraw Hill 2007.

*C: A Reference Manual, 5<sup>th</sup> Edition*, by Samuel P. Harbison and Guy L. Steele, Prentice-Hall, 2002.

**The following (online) textbooks are recommended:**

*The Bison Manual: Using the YACC-Compatible Parser Generator, 8<sup>th</sup> Edition*, Charles Donnelly and Richard M. Stallman, GNU Press, 2003. URL: <http://www.gnu.org/software/bison/manual>

*The Scheme Programming Language, 3<sup>rd</sup> Edition*, by R. Kent Dybvig. URL: <http://www.scheme.com/tspl3>

**Lectures:** **It is to your advantage to attend each and every lecture.** Lecture notes are handed out at the beginning of each class. Electronic copies of the lecture notes are placed on the course web page after the end of each class.

**Office Hours:** Office hours will be held as stated above unless otherwise announced in class or on the newsgroup. You may also request an appointment in person, by telephone, or via e-mail.

**Email/Newsgroup:** Feel free to send questions via email to the instructor or TA, or better yet, post them to the class newsgroup. Either the instructor or the TA will respond as soon as possible. Any questions that we receive via email that will benefit the entire class will be posted anonymously to the newsgroup, along with any comments deemed helpful. Flames and abusive mail will not be answered and may be posted to the newsgroup along with the sender's name.

**Homework:** Homework assignments will consist of assigned reading in the textbooks, online sources, and some historical papers on programming languages. Problem sets related to reading and lecture will be assigned regularly. Homework is intended to reinforce concepts from lectures, papers, and the textbooks.

**Programs:** One of the goals of this course is to gain basic familiarity with a variety of language concepts and their manifestation in different languages. To achieve this goal, there will be a several moderately challenging programming assignments in various languages. **Unless otherwise specified in the assignment, you are to work on the programming assignments on your own, without assistance from classmates, other people, or resources other than documentation of language features in books or online tutorials. Using Internet search engines to search for solutions to assignments is expressly forbidden.** It is assumed that you have access to a departmental or personal UNIX™, Linux, MacOS X or Windows™ computer system for programming. Language systems used in this course are available on multiple platforms. Information for how to obtain language systems will be provided. I highly recommend you use the Eclipse development environment for writing your programs, which is available on all platforms. See <http://www.eclipse.org>.

**Quizzes:** There will be occasional in-class quizzes that will be based on recent lectures, the assigned reading and homework assignments. Quiz days will not be announced in advance. If you miss a quiz, a grade of zero is assigned for that quiz. The **lowest quiz grade and lowest homework grade will be dropped** in computing your final homework and quiz average for the course. **Questions about quiz grading must be made in person to the TA by the next class day after the quiz is returned.**

**Exams:** There will be a **mid-term examination** and a **comprehensive final examination** according to the following schedule. The exams will be based upon material from the lectures, assigned readings, homework assignments, quizzes and programming assignments. You are allowed to bring one US Letter size page of paper to each exam containing notes at whatever optical resolution you desire. **Questions regarding the grading of the midterm exam must be submitted in writing by the next class period after the exam is returned in class.**

<b>Mid-Term Exam</b>	<b>Wednesday, 17 October, 7-10 p.m. Room TBD. Material Covered up to this date.</b>
<b>Final Exam</b>	<b>Day/Time/Room TBD. Comprehensive.</b>

**Grading:** **Each exam counts 25%, programs collectively count 35%, homework and quizzes collectively count 15%.** There may be extra credit assignments. The final grade is calculated on a standard academic grading scale: **A: 90-100, B: 80-89, C: 70-79, D: 60-69, F: 0-59.** The instructor reserves the right to set the lower-bound for each grade scale in a consistent manner, but you are guaranteed that the lower bound will not increase. For example: an 90 final course average guarantees a grade of A, but a 89.49 final course average may not qualify for a grade of A. However, if an 89.49 qualifies for an A, then a 79.49 qualifies for a B, a 69.49 qualifies for a C, and a 59.49 qualifies for a D.

**Important Dates:** All important semester dates are posted at: <http://www.utexas.edu/student/registrar/07-08long.html>

**Code of Conduct:** See <http://www.cs.utexas.edu/users/ear/CodeOfConduct.html>. Students that violate University rules on academic honesty are subject to disciplinary penalties, including the possibility of failure in the course and/or dismissal from the University. Academic dishonesty harms all students and the integrity of the University. Policies on academic dishonesty will be strictly enforced.

**Extenuating Circumstances:** If you have difficulty meeting the requirements of this course because of extenuating personal circumstances, you are to notify the course instructor at the *earliest possible date* so that your unique situation can be discussed in confidence. If you encounter an unexpected medical or family emergency, or a random act of Nature, that will cause you to unexpectedly miss a class assignment or exam, you must notify the instructor at the earliest possible date in order to qualify for any possible special consideration.