CS 3723 Programming Languages Spring 2012

Class schedule: MWF, 10:00-10:50am SB 2.02.06
Recitation schedule: MW 11:00-11:50am SB 3.02.10A
Final Exam Schedule: May 9, 7:30-10am. TBA

Instructor: Qing Yi (`qingyi@cs.utsa.edu`)
Office: SB 4.01.30
Office Hours: MW: 12:00-1pm, by appointment
Office Phone: 458-5671

Textbook

Concepts in Programming Languages, by John Mitchell, Cambridge University Press

Reference books

The Little Schemer, by Daniel P. Friedman and Matthias Felleisen, the MIT Press.
Elements of ML Programming, 2nd Edition (ML97) by Jeffrey D. Ullman, Prentice-Hall.
The C++ Programming Language, by Bjarne Stroustrup, Addison Wesley.

Overview

We will study the basic concepts and design principles of general-purpose programming languages. Topics include foundations of computation theory, syntax and semantics of languages, and the functional, imperative and object-oriented programming paradigms. We will study why languages are designed the way they are and how to effectively use different language features to implement various algorithms and data structures.

Class Objective

Understand the programming techniques associated with various language features and how to use them in problem solving and software development.

Class Website

`www.cs.utsa.edu/~qingyi/cs3723`
Check for class handouts and announcements.

Prerequisites

CS 2213 (advanced programming) and CS 3233 (discrete mathematics). You need to be familiar with both Java and C to be ready to study new languages such as Scheme, ML, and C++.

Requirements

By the end of the class, you should have sufficient understanding of the fundamental concepts about programming language and the associated basic programming skills. You will be required to work on regular programming assignments to apply the learned concepts and hone your programming skills.

To improve your problem solving skills, a set of challenging problem will be posted periodically during the semester. These problems are typically due two weeks after they are posted and do not count as regular homework assignments as they will require significant amount of independent thinking and problem solving skills, and their solutions will not be covered in classes. However, your grade on solving these problems will constitute 5% of your

overall grade for this class, and you are encouraged to discuss your solutions with the instructor. You are strongly encouraged to attempt at solving these problems as they are given as exercises to stretch your mind and practice becoming an independent thinker.

Grading

Exams (two midterms and one final): 55%;
Homework (including projects): 25%;
Recitations and class participation: 15%;
Problem solving: 5%.

Homework will be assigned on a weekly basis. Late homework submission will be subjected to penalty points at the instructor's discretion. No late homework will be accepted after the solution has been posted.

Attendance

You are responsible for all presented materials and assigned readings in class. Class attendence will be taken and will count towards your final grade.

Collaboration Policy

You are expected to work on homeworks and projects individually. It is acceptable to ask others (TA, the instructor, or your classmates) for hints and help, and encouraged to discuss general problem-solving strategies. However, you must work on your assignments independently and must indicate in your assignments any assistance you have received. Any assistance received that is not given proper citation may be considered cheating. In any event, you are responsible for understanding and being able to explain all statements in your homework and exam solutions.

Email Policy

You are encouraged to use the class discussion forum linked at the class web site to post questions about lectures, homeworks and course organization. The instructor will monitor the forum and post answers that the entire class can see. If your message fails to receive a response in the forum, you may also redirect the message via email to the instructor. Always leave a reasonable time period (1-24 hours on workdays) for your question to get answered. Last minute questions (those sent the night before homework is due) may not be answered in time.

Extra Credit

Over the course of the semester, extra-credit assignments may be given to help you improve your grade. /*(e.g., write a survey about five different programming languages).*/ These extra-credit assignments will count towards your final grade in various ways as indicated in the assignments.

If you are interested in undertaking additional projects or papers (aside from the ones already given), consult with the instructor during office hours.