

# CS558 Syllabus

January 1, 2015

CS 558 Programming Languages - Winter 2015 - Syllabus

CRN: 40980

Course No. CS558

Course Name. Programming Languages (3 cr)

Times: Monday & Wednesday 17:50-18:30

Place: CH 321

Textbook: Programming Language Pragmatics, by Michael L. Scott.  
ISBN 13:978-0-12-374514-9

Instructor: Tim Sheard

Office: FAB 120-04

Phone: 503-725-2410

Office Hrs Thursday 10-12 am.

I am also available by appointment,  
just email and set one up.

Email: sheard@cs.pdx.edu

## 1 Description

A comparative study of programming languages, with emphasis on underlying issues in language implementation. Detailed study of features and concepts of both conventional imperative languages, including object-oriented languages, and less conventional paradigms, including functional programming. Emphasizes “hands on” experience programming in a series languages implementing various language styles. Each language is a “simplified language” that illustrate the concepts under study. We will both program in these languages, and study their implementaions. Each implementaion is

written in Haskell. Students will be, on occasion, asked to implement small changes in the implementations (on the order of a few lines).

## 2 Goals

The student who successfully completes this course should: understand the fundamental structure of programming languages; be familiar with key issues in language design and implementation; and be aware of the range of available languages and their uses.

## 3 Prerequisites

Ability to program fluently in at least two high-level languages, examples include Python, Java, C#, C++, or C.

## 4 The daily record

The class web page <http://web.cecs.pdx.edu/~sheard/course/CS558/DailyRecord.html> contains the daily record, a list of links for each meeting of the class. All information for the class can be found here. Typical links include announcements, class topic, links to worksheets and homeworks, and a list of what is due that day.

## 5 Text

The following text is required: Michael L. Scott, Programming Language Pragmatics, 3rd ed. Morgan Kaufmann, ISBN 13:978-0-12-374514-9.

We will cover much, but not all, of this book. A few additional required readings will be made available on the web from time to time.

Also, you will probably want to have access to tutorial and reference materials on Haskell and Python; some of these are listed on the course web page. Copies of lecture slides will be available in PDF format on the class web page, normally prior to the start of each lecture (but possibly not by much!)

## 6 Assigned readings and worksheets

Each lecture (except the first) has a list of assigned readings. You **must read the assigned reading before the class begins**, and complete the worksheet on that reading and submit it to D2L. A significant portion of the class depends upon the students having read the assigned readings before class begins.

See the daily record for details of which chapters and sections you should read.

## 7 Assignments, Exams, Worksheets and Grading

Homework assignments will be distributed and collected each week (except that no homework is due the week of the midterm). Assignments will typically consist of programming problems in a variety of languages, together with a few analysis problems that ask for brief answers in English. Assignments must be submitted by D2L.

Worksheets are assigned to be sure students have done the assigned reading.

There will be one midterm and a final exam. Exams will allow one 8.5 inch by 11 inch page of notes.

Grading will be based 5% on worksheets, 30% on homework, 30% on the midterm exam, and 35% on the final exam. Each of the homeworks counts equally (although some will probably be harder than others).

## 8 Computing Facilities

To do the homework, you will need access to compilers or interpreters for Haskell and Python (version 3 or later). These are all available on the CS departments linuxlab machines. You should already have accounts on these machines; your account can be activated by taking your PSU id to FAB 82-01. You will probably also wish to install these languages on your own computer. This is easy to do on Windows machines, and should also work on linux and mac (although the instructor cannot give much help with linux or mac installations). Pointers to download pages will be placed on the course

web page. All program materials needed for doing the assignments will be made available for download from the course web page.

## **9 Staying In Touch**

Keep an eye on the course web page and D2L for late-breaking announcements! Also, all students should be sure the email address on D2L is one they read regularly (change it if it is not!). The instructor will use the D2Llist to communicate important announcements, homework hints, etc. Students may also use this list to alert the class to information of general interest (but see the next section).

## **10 Individual Work**

All homework assignments and exams must represent your own, individual work. It is permissible to discuss assignments with other students, but the solutions must be recognizably your own. Do not, under any circumstances, copy another persons code and submit it as your own. Writing code for use by another or using anothers code in any form (even with their permission) will be considered cheating. Cheating on an assignment or exam will result in an automatic zero grade for that piece of work, and the initiation of disciplinary action at the University level.

## **11 Disabilities**

If you are a student with a disability in need of academic accommodations, you should register with Disability Services for Students and notify the instructor immediately to arrange for support services.