CSC347 Concepts of Programming Languages
Syllabus for Spring 2015

Corin Pitcher

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Overview

Programming paradigms and language concepts: functional programming; comparison of object-oriented languages; type systems for functional and object-oriented languages; runtime systems for functional and object-oriented languages. A variety of programming languages will be used to illustrate concepts, e.g., JavaScript, Ruby, Scala, Scheme.

Instructor Information

- **Instructor** Dr. Corin Pitcher
- **Loop Office** 835, CDM Building, 243 S. Wabash Avenue
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- **Tel** +1 312 362 5248
- **Instructor's Homepage**
  http://fpl.cs.depaul.edu/cpitcher/

- **Course's Homepage**
  http://fpl.cs.depaul.edu/cpitcher/courses/csc347/
  (for lectures slides, learning outcomes, reading schedules, examples)
- **LMS Homepage**
  http://d2l.depaul.edu
  (for grades and video recordings)
- **Office Hours** : http://my.cdm.depaul.edu/people/facultyInfo_mycti.asp?id=104

Prerequisites

If you are not sure that you have satisfied the prerequisites, speak to the instructor before the second lecture.

Prerequisite Courses

- **Data Structures in Java II** (CSC301).
- **Computer Systems I** (CSC373)

Prerequisite Skills

- You *must* have programmed with Java and C before this course.
- Integrated Development Environment (IDE) support is unavailable for many tools, so you should be familiar with use of the command line:
  - Command Prompt or Powershell on Windows
  - a shell on Linux / OS X such as `bash` or `zsh`

Textbooks

There are two required textbooks:

- *Concepts in Programming Languages* by Mitchell.
  Published by Cambridge University Press.
  http://www.cambridge.org/catalogue/catalogue.asp?isbn=0521780985
- *Programming in Scala: A Comprehensive Step-by-step Guide* by Odersky, Spoon, and Venners, 2nd edition.
  Published by Artima Press.
  http://www.artima.com/shop/programming_in_scala_2ed.
  http://www.amazon.com/Programming-Scala-Comprehensive-Step-step/dp/0981531601.

  This is available in paperback and/or as a PDF ebook (for purchase). If you wish to buy the PDF ebook or you want to buy the paperback and PDF ebook combo, visit the Artima Press website (see link above).

  NOTE The second edition of *Programming in Scala* is the current version, but the first version will suffice for the course.

Assessment

The course grade will be based on:

Item	Weight
Homework assignments	35%
Midterm Exam	30%
Final Exam	35%

- The exams are multiple choice.
- The final exam is comprehensive, i.e., requires knowledge of the material covered in the entire course.

Policies I

Changes to Syllabus

This syllabus is subject to change as necessary during the quarter. If a change occurs, it will be thoroughly addressed during class, posted under Announcements in D2L or COLWeb, and sent via email.

Attendance

1. Attendance will be taken. Non-attendance will result in a 1% penalty per class missed to overall class score starting with the third missed class, i.e., no penalty for 1 or 2 classes missed; 1% penalty for 3 classes missed; 2% penalty for 4 classes missed; 3% penalty for 5 classes missed; etc.
2. The midterm exam and final exam dates are posted on the schedule on the course homepage. You must attend the midterm and final exams. A medical note will be required for an absence. Business trips or vacations are not valid reasons for missing the exam.
3. **Lecture slides are a supplement to lectures only.** The slides are not intended to be read in lieu of listening to the lecture.

Homework

1. Students must keep backup copies of all submitted homework.

2. Homework assignments will be distributed and submitted via repositories using the Git distributed version control system. Students must use their personal Git repository to retrieve and submit each assignment. Students will need to:

   - Create a (free) personal BitBucket account.
   - Install Git and an SSH client. For Linux, install Git and SSH via your package manager. For Windows and OS X, consider .
   - Create an SSH keypair and paste your public key into your BitBucket account settings web page.
   - Read the BitBucket tutorials:
     - `https://www.atlassian.com/git/tutorial/git-basics`
     - `https://www.atlassian.com/git/tutorial/remote-repositories`
   - Clone your personal repository.

3. Students must verify that homework has been submitted correctly, i.e., by logging in to the BitBucket web interface to check that their modifications have been uploaded.

4. Homework submissions are usually due by 1:00PM on the day of class. **Late submissions will not be accepted at all because each assignment is discussed in class.**

5. Homework submissions must be submitted through the online system. **Email submissions will not be accepted at all.**

6. Submitted work must be worked on individually. You must not use or look at anyone else's solution, and you must clearly acknowledge any code that you obtain from other sources (such as books, magazines, or the Internet). If you are in any doubt, contact the instructor well before the submission date for advice. You may use as much code as you like (without acknowledgement) from the examples discussed in class. Plagiarism will result in penalties up to and including failing the course.

Expectations

1. Several languages and tools will be used. Students are expected to learn these languages and tools without the level of guidance that would be available for 100 and 200 level classes.

2. The course requires that students actively engage the material on your own. Students should not only read the notes and example programs, but also do self-tests, modify code, and run it. As always, figure out what you can definitely code, code it, try it, and then consider extending the boundaries.

3. Students must keep up with the assigned textbook reading.

4. Students are strongly encouraged to ask questions and offer comments relevant to the day's topic.

5. All electronic interactions are an extension of the classroom and should be treated as such. While disagreement can be part of the discourse, online communication should remain respectful and appropriate rather than demeaning and/or unprofessional.

6. Classroom use of a laptop or tablet must normally be restricted to class-related tasks such as note taking, checking references, testing code examples, etc.

Policies II

Retro-Active Withdrawal

CDM understands certain extenuating circumstances can hinder one's ability for academic success and completion of course work. Please see http://www.cdm.depaul.edu/Current%20Students/Pages/Enrollment-Policies.aspx for additional information.

Absence Notifications

In order to petition for an excused absence, students who miss class due to illness or significant personal circumstances should complete the Absence Notification process through the Dean of Students office. The form can be accessed at http://studentaffairs.depaul.edu/dos/academicprocesses.html. Students must submit supporting documentation alongside the form. The professor reserves the sole right whether to offer an excused absence and/or academic accommodations for an excused absence.

Academic Integrity and Plagiarism

This course will be subject to the university's academic integrity policy. More information can be found at http://academicintegrity.depaul.edu/. If you have any questions be sure to consult with your professor.

Academic Policies

All students are required to manage their class schedules each term in accordance with the deadlines for enrolling and withdrawing as indicated in the University Academic Calendar. Information on enrollment, withdrawal, grading and incompletes can be found at: http://cdm.depaul.edu/enrollment

Incomplete Grades

An incomplete grade is defined in the Student Handbook as follows (note that the policy in the undergraduate student handbook applies to both undergraduate and graduate students): A temporary grade indicating that the student has a satisfactory record in work completed, but for unusual or unforeseeable circumstances not encountered by other students in the class and acceptable to the instructor is prevented from completing the course requirements by the end of the term. Please see http://www.cdm.depaul.edu/Current%20Students/Pages/Grading-Policies.aspx for additional information.

Students with Disabilities

Students who feel they may need an accommodation based on the impact of a disability should contact the instructor privately to discuss their specific needs. All discussions will remain confidential. To ensure that you receive the most appropriate accommodation based on your needs, contact the instructor as early as possible in the quarter (preferably within the first week of class), and make sure that you have contacted the Center for Students with Disabilities (CSD) at: mailto:csd@depaul.edu

- Lewis Center 1420, 25 East Jackson Blvd.
- Phone number: 312 362 8002
- Fax: 312 362 6544
- TTY: 773 325 7296

Dean of Students' Office

The Dean of Students' Office (DOS) helps students navigate the college experience, particularly during difficulty situations such as personal, financial, medical, and/or family crises. For a list of support services and advocacy information, please visit http://studentaffairs.depaul.edu/dos/.

Online Course Evaluations

Evaluations are a way for students to provide valuable feedback regarding their instructor and the course. Detailed feedback will enable the instructor to continuously tailor teaching methods and course content to meet the learning goals of the course and the academic needs of the students. The evaluations are anonymous; the instructor and administration do not track who entered what responses. A program is used to check if the student completed the evaluations, but the evaluation is completely separate from the student's identity. Since 100% participation is our goal, students are sent periodic reminders over three weeks. Students do not receive reminders once they complete the evaluation. Students complete the evaluation online in CampusConnect.