Course Syllabus for CSE 411: Advanced Programming Techniques, Fall 2015

Course summary. Deeper study of programming and software engineering techniques. The majority of assignments involve programming in contemporary programming languages. Topics include memory management, GUI design, testing, refactoring, and writing secure code.

Instructor. Gang Tan, Packard Lab 329, 610-7583737, gtan@cse.lehigh.edu. Office hours: Weds 1:30-3pm or by appointment.

Time and location. TTh 2:35-3:50pm; Packard Lab 360.

Course website. A public website at http://www.cse.lehigh.edu/~gtan/teaching/cse411f15/. Supplementary materials will be posted in CourseSite.

Textbook. No textbook is required. However, a number of useful books are available for free in electronic form via the library. Check out the following webpage for examples of such resources. More links will be added to the page during the semester.

http://www.cse.lehigh.edu/~gtan/teaching/cse411f15/links.html

Major topics covered.

- Software engineering best practices
- Scripting languages
- GUI development
- Memory management
- Writing secure code
- Program verification
- Unit testing
- Code refactoring
- Numeric analysis
- Parallel programming
• Data mining and visualization
• Language interoperation

**Attendance.** Attendance is expected. Students who have legitimate reasons for absence have to inform the instructor **before the fact.** You are responsible for all materials presented in class whether present or not.

**Homework.** You will periodically receive homework assignments that are to be turned in. You may discuss the homework with other students in the class, but you must do your own work; you may not copy someone else’s solution. Most homeworks will be programming assignments.

**Late Homework.** Unless explicitly stated otherwise, programs are due electronically at 11:59pm (local time) on the due date. Late programs will be accepted (up to three days after due), but will be penalized 15% per day that is late.

**Exams.** No exams for this course, but there may be unannounced quizzes.

**Grading.** Programs will be graded on correctness, performance, style, and documentation and then weighted to reflect its complexity. Most homeworks will be graded by graders. For a couple of assignments, students will grade and provide feedback to others’ projects.

Homework assignments will be worth 90% of final grade; class participation worth 10%. Our labs often require students to submit their lab notes electronically. These lab notes will count toward the participation grade. **No makeup labs will be given.**

**Computer Facilities.** The primary computer resource will be the various CSE workstations in the Sun-Lab (e.g., those in PL122) running the Linux (Cent OS) operating system, but students are free to utilize other (equivalent) computers for developing their programming assignments. However, all programming assignments, unless explicitly stated otherwise, must work correctly on the machines in the SunLab.

The labs are open six days a week (see the lab monitor schedule for exact times [http://monitors.cse.lehigh.edu/2015.fall.html](http://monitors.cse.lehigh.edu/2015.fall.html)) so you can work here outside of class. However, you’ll also have to avoid coming during times that the SunLab is used for classes; see [http://www.cse.lehigh.edu/~hodgson/sunlab/schedule.html](http://www.cse.lehigh.edu/~hodgson/sunlab/schedule.html).

**Feedback.** The success of this course needs a mutual communication between course staff and students. We welcome your feedback on anything related to the course, such as course material we cover, teaching techniques, and difficulties in finishing the homework and project. We need your input!

**Academic Integrity.** Academic integrity is crucial for the pursuit of knowledge. Please refer to Lehigh’s policy of academic integrity.

**Accommodations for Students with Disabilities.** If you have a disability for which you are or may be requesting accommodations, please contact both your instructor and the Office of Academic Support Services, University Center C212 (610-758-4152) as early as possible in the semester. You must have documentation from the Academic Support Services office before accommodations can be granted.