Data Structures and Algorithms II
CS 2631 (Winter 2014)

Instructor: [Dr. R. Rosebrugh](#), Dunn 203

General

- **Class times and location:** Mon/Wed/Fri, 12:30pm-13:20pm, CTEE 223
- **Lab time and location:** Wed, 2:30-5:20pm, Dunn 101
- **Textbooks:** *Data Structures and Algorithms in Java (2nd Edition)* by Robert Lafore, [*Open Data Structures* by Pat Morin, and *Java Structures*](#), by D. Bailey (free on-line)
- **Prerequisite:** Computer Science 2611.
- **Office hours:** Mon 14:30-16:00, or email for appointment.
- ***The programming language for this course is Java.***

Check this URL regularly for information about the course.

Syllabus *Revision: Feb 26, 2014*

Revisions below are noted with ***bold italic***

Topics, dates, text readings:
In all cases involving Java, also consult Sun Java Tutorials and the Java API. Dates for starting topics are approximate, and will be updated.

Review: Inheritance, Abstract Classes and Interfaces, Generics: Jan 6 Bailey Ch 4, 7
Iterators: Jan 13
     Lafore Ch 5; Bailey Ch 8
User interfaces: GUI's: Jan 17
     Course notes; Sun Java Tutorial
n lg n sorts: heapsort and quicksort ; analysis of comparison sorts; other sorts: ***Mar 3***
     Lafore Ch 6,7; Morin Ch 11; Bailey 6.5,6.6
Map Structures and Hashing: ***Mar 10***
     Lafore Ch 11; Morin Ch 5; Bailey 15.1-15.5
Threads and Concurrency: ***Mar 17***
     See references on Moodle
Balanced tree algorithms: AVL and RB trees: ***Mar 24***
     Lafore Ch 10; Morin Ch 9; Bailey 14.7
Data Compression and Tries: ***Mar 31***
     Bailey 12.8
More graph algorithms: ***Apr 7***
     Lafore Ch 13, 14; Morin Ch 12; Bailey 16.4

Evaluation

Note: In order to pass the course:

- a passing mark on the *aggregate of the test and the final exam* must be obtained;
- *and* you must be present for all labs (unless excused).
- *and* you must be present for 80% of the quizzes (they will be from assigned homework problems).

Grades will be assigned using approximately the following weights:

- Labs: 15% **Lab attendance is mandatory.**
- Assignments and quizzes: 15%
- Midterm Test: 20%
- Final Exam: 50%

The midterm test will be held on **Wednesday, March 12 [in class]**.

Laboratories

There will be about five laboratories held in Dunn 101, Weds 2;30-5:20, starting January 22. Lab coding must follow the CS2631 - Style Guide 2014. Lab periods will also be used for interactive assignment grading.

Resources

- Generics Tutorial
- www.lookuptables.com -- Tables for ASCII, HTML, Unicode, etc.
- Sun Java Tutorial
- Sun Swing Tutorial
- Zetcode Swing Tutorial
- Other useful free texts are at:

  http://www.brpreiss.com/books/opus5/html/book.html
  Plus a large list of related books at
  http://freecomputerbooks.com/compscAlgorithmBooks.html

- Nice basic Java text, see especially "Java Charts" for syntax at: http://www.cs101.org/ipij/

Assignments

Be sure to look at *all* problems in the text, not just the ones assigned to be handed in.

Notes: (these apply to \emph{all} assignments):

1. Problems with a * must be handed in electronically with the following specification:
   Email to the instructor one .zip file called FLnnn.zip where FL are your first and last initials and nnn is the problem number, for example nnn= "C2.9". The zip file must contain one folder that is an Eclipse project named FLnnn, including Javadoc.
2. Code must conform to the CS2631 - Style Guide 2014 .
3. Solutions to other problems must typed (LaTeX preferred). Be sure that you test any code you

hand in.

4. Late assignments are penalized one letter grade per day, and not accepted beyond three days late.

5. You may discuss the assignment problems with classmates, but unless noted otherwise, you must do all coding and written work yourself. Read and be familiar with the [Academic Calendar Section 10.13.](#)

6. You are expected to **be familiar with** and you **must follow** the [Computing Services Department Policies](#) . Note especially Password Policy, Terms & Conditions for Use of University Computing Accounts, Computer Network Usage Policy.