Meeting Information

College Hall 225
MWF 2:00–2:50 p.m.
Final exam: Monday, Dec. 12, 11:00–1:00
Course web page: http://blackboard.duq.edu

Instructor

Dr. Jeffrey Jackson
Office: 433 College Hall
Office Hours: Monday/Wednesday 10–11 a.m. and 3–4 p.m., Friday 8–9 a.m., drop-in, and by appointment
Phone: (412) 396-6466
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Textbook

Concepts, Techniques, and Models of Computer Programming

Objectives

This course will acquaint the student with a number of concepts that underly various programming languages. Some specific topics that students should understand are:

- Lists and the use of recursion for list processing.
- Lazy evaluation of partial data structures.
- Higher-order functions/programming languages.
- Concurrency using dataflow variables, message passing, and shared state.
- Various types of data stores: value, dataflow variable, cells.
- Abstract data types and privacy.
- Dynamic and static scope of identifiers.
• Various types of parameter passing, including by-value, by-reference, and by-name.
• Relationship of object-oriented programming to other computation models.
• Use of locks, monitors, and transactions in connection with shared-state concurrency.
• Relationship of the languages Haskell, Erlang, and Java to the computational models studied.

There will be both written and programming assignments. I plan on approximately eight written homeworks and six programs. There will be two exams during the semester and a comprehensive final which will have more emphasis on material not previously tested. Unless otherwise specified, the homeworks and programs will be due at the beginning of class on the due date.

While I will not formally take attendance, I encourage regular attendance.

Grading

Grading will be based on:

• Written homework 25%
• Programming assignments 25%
• Semester exams 30%
• Comprehensive final exam 20%

Quizzes and the final exam will be closed-book and in-class. They will typically consist of short-response questions.

The final grade will be assigned as follows:


I do give minus grades, and I don’t curve much if at all. So if a particular grade is important to you, make sure that you understand my grading policies and put in the effort to get that grade.

Honor Policy

All work that you turn in, whether exams or assignments, must be your own unless I specify otherwise, although of course any help you receive from me is acceptable. If you turn something in that includes work that is not your own and I discover it, what you turn in will receive no credit. Repeat offenses may result in course failure. If you are not sure
what constitutes “your own” work, I expect you to ask me rather than assuming that your understanding is correct. If you don’t have time to ask, assume that if you have a question about whether or not something is your own work, it probably is not.

Schedule

1. Declarative computation model (exam Sept 23)
2. Concurrency and state (exam Oct 26)
3. Object-oriented model and shared-state concurrency

Notes

Students with documented disabilities are entitled to reasonable accommodations if needed. If you need accommodations, please contact the Office of Freshman Development and Special Student Services in 309 Duquesne Union (412-396-6657) as soon as possible. Accommodations will not be granted retrospectively.

The information in this syllabus is subject to change at the instructor’s discretion.