

# CMSI 585

## PROGRAMMING LANGUAGES

### Fall 2004

Doolan 219

Monday Evenings, 6:30 – 9:30pm

3 semester hours

Office Hours: M 3–5pm, TR 2–3pm

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Doolan 106

### Course Objectives

To master some of the fundamental concepts that underlie programming language syntax and semantics through a comparative study of several languages and their features. Understanding conceptual issues on their own, without confusing them with a particular language's implementation of them, is crucial to being able to use a language well and learn new programming languages on one's own.

### Course Requirements

Programming proficiency in one but preferably two high-level languages such as C, C++, Smalltalk, or Java. A previous course in Data Structures and Algorithms.

### Materials and Texts

- Michael L. Scott, *Programming Language Pragmatics*, Morgan Kaufmann, 2000.
- Assorted handouts, articles, and sample code to be distributed throughout the semester.

### Course Work and Grading

Your graded coursework will consist of accumulated homework (10%), 2 quizzes (30% or 15% each quiz), 1 research paper (30%), and 1 final exam (30%). Ungraded coursework includes frequent discussion of current topics and your own work in front of the class. Letter grades are determined using the percentage-to-letter map shown below:

93–100%	A	80–82%	B–
90–92%	A–	77–79%	C+
87–89%	B+	73–76%	C
83–86%	B	70–72%	C–

Fractions of a percent are handled with the usual rule:  $\geq 0.5$  rounds up to the next integral value. Your programming style will play a part in the grading of any code that you write. Poor structure, under- (or non-) commenting, bad naming, inappropriate hard-coding, and difficult maintenance constitute negative qualities that will drag down the grade of an otherwise working program.

### Homework

Homework will consist of assorted questions, exercises, and programming assignments, to be given throughout the semester. Homework is where you can “learn from your mistakes” without grading penalty. If you submit your homework on time, you will get full credit for them, regardless of their correctness. What goes around comes around — the effort you put into your homework pays off in the quizzes, final exam, and research paper.

Homework is due at the beginning of the next class. We will always “process” the homework on the class that it is due by having one or more of you talk through what you did; it is frequently just as important to be able to communicate your understanding of a subject as it is to understand it in the first place — particularly if you are working in a team and trying to understand each other’s code!

Late homework, whether 10 minutes late or 10 days late, will receive half credit. At the end of the semester, the proportion of homework that I have from you relative to the total homework assigned will answer for 10% of your final numeric grade. For example, if homework is assigned 5 times throughout the semester, 5 out of 5 on-time submissions result in a full 10%; 3 on-time submissions and 2 late submissions add up to 8%; and 2 submissions result in 4% credited.

Yes, technically, you can still get an A if you submit no homework at all but absolutely ace the research paper, quizzes, and final exam. But...do you really want to do that?

## **Research Paper**

You are asked to write a near-publication quality paper on either (1) a language that you design yourself, or (2) a bleeding-edge or obscure but academically significant programming language from the literature. Prior to launching full-bore into the paper, you will first need to submit a prospectus which we will refine together until we agree on the scope and subject matter of the paper. The prospectus is due at the beginning of our September 20 class, and will be finalized by October 4 at the latest.

Because this class is all about understanding the concepts behind these things called programming languages without depending on specific language details, the prospectus and paper must be written using LaTeX, which is a document specification language in its own right. I will ask for the paper not in a black-box PDF or printed format, but in its pure, “LaTeX source code” form, burned onto a CD along with the prospectus source file(s). Believe me, this approach makes things easier for you.

The outline for the paper is provided as a separate handout — in LaTeX, of course. A near-trivial template for the prospectus is also provided.

The research paper is due at the beginning of our last class, December 6.

## **Quizzes and Final Exam**

Quiz 1 is initially scheduled for October 4. Quiz 2 is scheduled for November 22. The final exam is scheduled for December 13. All tests are open-*paper*-everything; no sharing. You may neither solicit nor give help while the exam is in progress. Late and/or missed tests will be handled on a case-to-case basis; in all instances, talk to me about them.

## **Attendance**

I am not a stickler for attendance, but I do like having a full class. Your submitted work will determine your final grade. Remember that the university add/drop deadline is November 5.

## **University Policy on Academic Honesty**

Loyola Marymount University expects high standards of honesty and integrity from all members of its community. Applied to the arena of academic performance, these standards preclude all acts of cheating on assignments or examinations, plagiarism, forgery of signatures or falsification of data, unauthorized access to University computer accounts or files, and removal, mutilation, or deliberate concealment of materials belonging to the University Library.

## **Course Schedule**

September 6	Labor Day: no class
September 20	Prospectus due
October 4	Prospectus finalized; Quiz 1
November 5	University add/drop deadline
November 22	Quiz 2
December 6	Research paper due
December 13	Final Exam (6:30 PM)

You can view the class calendar on the Web at:

<http://ical.mac.com/dondi/LMU>

If you have an iCalendar-savvy client (i.e. Mozilla Calendar, Ximian Evolution, KOrganizer, Apple iCal, etc.), you can subscribe to the class calendar at:

<webcal://ical.mac.com/dondi/LMU.ics>

On-the-fly updates and adjustments to the class schedule will be reflected in this calendar.