

# Syllabus - COMP 325 - Organization of Programming Languages

Fall 2015

## 1 Logistics

- **Where:** Center for Science and Business, Room 303
- **When:** MTWF, 1-1:50pm
- **Instructor :** James *Logan* Mayfield
  - *Office:* Center for Science and Business, Room 344
  - *Phone:* 309-457-2200
  - *Email:* lmayfield at MONMOUTHCOLLEGE dot EDU
  - *Office Hours:* By Appointment
- **Website:** <https://jlmayfield.github.io/MC-COMP325>
- **Credits:** 1 course credit

*Note: Parts of this Syllabus are subject to change based on specific class needs.*

## 2 Texts

Krishnamurthi, Shriram. *Programming and Programming Languages*. 2014.

- Book (HTML): <http://pap1.cs.brown.edu/2014/>

Krishnamurthi, Shriram. *Programming Languages Application and Interpretation*. Second Edition. Creative Commons. 2012.

- Main Site: <http://www.cs.brown.edu/~sk/Publications/Books/ProgLangs/2007-04-26/>
- Book (HTML): <http://cs.brown.edu/courses/cs173/2012/book/>

## 3 Programming Language and Environment

We'll be diving in with the *Pyret* language that accompanies PAPL. Pyret has an in-browser development environment and so may be used on any computer with a (modern) web-browser.

- <http://www.pyret.org/>
- Style Guide: [http://cs.brown.edu/courses/cs173/2013/Pyret\\_Style\\_Guide.html](http://cs.brown.edu/courses/cs173/2013/Pyret_Style_Guide.html)

We might, from time to time, look at some *Racket* as its used in PLAI. If you need or want to update your DrRacket installation, here's the link.

- <http://www.racket-lang.org>
- Style Guide: <http://cs.brown.edu/courses/cs017/content/docs/racket-style.pdf>

## 4 Description and Content

This course is an exploration of modern programming languages through the study and implementation of interpreters for fundamental language features. By implementing small languages with common PL features, students expand their skill set with both practical and theoretical knowledge. To understand programming languages is to understand programming and computation as a whole. A programming language is how we describe a computational process and study of the languages themselves helps to shed light on the inner workings of a computation.

### 4.1 Content

This course will, for the most part, follow the text. Topics to be covered will include:

- Principles of Language Design and Implementation
- Arithmetic Expressions
- Conditionals
- Functions and Procedures
- Records
- State and Mutation
- Garbage Collection
- Types
- Objects
- Parametrized Types
- Type Inference

## 5 Expectations and Policies

You are expected to carry yourself in a mature and professional manner in this course. Towards this end, there are a few classroom policies by which you are expected to abide.

- *Late Assignments:* In general, late assignments will *not* be accepted. If you feel you have a justified reason for the assignment being late you may set up an appointment to meet with the instructor and plead your case. Situations beyond your control are understandable and exceptions can and will be made.
- *Attendance:* **Repeated absences and late arrivals to class will quickly reduce your participation grade to zero.** The occasional late arrival or missed class is one thing, but being habitually late and regularly missing classes is disruptive and not fair to your classmates.
- *Participation:* Cellphone and computer usage in class for non-class related activities is strongly discouraged. All devices should be set to silent when in class. If your usage of technology becomes a distraction to your classmates or your instructor, then your participation grade will suffer. If you're not sure if your being a distraction, then err on the side of caution and assume your distracting someone. Put another way, if the instructor or a classmate has to tell you you're distracting them, then you've already gone too far.
- *Quality of Work:* There are several minimal requirements that your assignments must meet.

- *Electronic Submissions* Most of your work will be handed in electronically. It is your responsibility to know and understand the system for doing so and to be sure your work has properly submitted. Not following the instructions for assignment submission can mean your assignment does not get submitted and will be considered late.
- *Staples* - Assignments that take up more than one page must be stapled. Unstapled assignments will either be returned to you to be stapled ASAP or points will be deducted.
- *Neatness* - Make every attempt to make your work neat and orderly: label problems, avoid excessive scratching out of mistakes (use pencil if you are prone to errors) and if you use spiral bound paper tear off the edges. Put your name on your work!
- *Show Work* - Rarely are answers alone sufficient for full credit. Show your work whenever prudent. If you're unsure if work is needed, *ask!*

## 5.1 Collaboration

In general, you are encouraged to make use of the resources available to you. This means it is OK to seek help from a friend, tutor, instructor, internet, etc. However, *copying of answers and any act worthy of the label of "cheating" is never permissible!* It is understandable that when you work with a partner or a group that the resultant product is often extremely similar. This is acceptable but be prepared to be asked to defend your collaborations to the instructor. *You should always be able to reproduce an answer on your own, and if you cannot you likely **do not really know the material**.* All of the Monmouth College rules on academic dishonesty apply. If you violate the rules be prepared to face the consequences of your actions.

## 6 Grades

This courses uses a standard grading scale. Assignments and final grades will not be curved except in rare cases when its deemed necessary by the instructor. Percentage grades translate to letter grades as follows:

Score	Grade
94-100	A
90-93	A-
88-89	B+
82-87	B
80-81	B-
78-79	C+
72-77	C
70-71	C-
68-69	D+
62-67	D
60-61	D-
0-59	F

You are always welcome to challenge a grade that you feel is unfair or calculated incorrectly. Mistakes made in your favor will never be corrected to lower your grade. Mistakes made not in your favor will be corrected. *Basically, after the initial grading your score can only go up as the result of a challenge.*

### 6.1 Workload

- 2-3 Homework Assignments
- 5-7 Interpreters
- 1 Paper with Presentation
- 1 Final
- 1 Midterm
- 3 Quizzes

## 6.2 Grade Weights

Your final grade is based on a weighted average of particular assignment categories. You should be able to estimate your current grade based on your scores and these weights. You may always visit the instructor *outside of class time* to discuss your current standing.

- Homework 5%
- Interpreters 30%
- Paper + Presentation 20%
- Final 15%
- Midterm 10%
- Quizzes 10%
- Participation 10%

## 6.3 Course Engagement Expectations

The weekly workload for this course will vary by student but on average should be about 11.5 hours per week. The follow tables provides a rough estimate of the distribution of this time over different course components for a 15 week semester.

Lectures+Final		3 hours/week
Homework/Interpreters	60 hours	4 hours/week
Exam Study Time	8 hours	0.5 hours/week
Quiz Study Time	8 hours	0.5 hours/week
Paper/Presentation	22.5 hours	1.5 hours/week
Reading+Unstructured Study		2 hours/week
		11.5 hours/week

### 6.3.1 Calendar

The following calendar should give you a feel for how work is distributed throughout the semester. Assignments and events are listed in the week they are due or when they occur. *This calendar is subject to change based on the circumstances of the course.*

Week	Dates	Assignments
1	8/25 - 8/28	
2	8/31 - 9/4	Written Homework Due
3	9/7 - 9/11	Interp. 1
4	9/14 - 9/18	Quiz 1.
5	9/21 - 9/25	Interp. 2
6	9/28 - 10/2	
7	10/5 - 10/9	Interp 3. Paper Anno. Bib. Hwk.
8	10/12 - 10/15	Midterm Exam. FALL BREAK (F)
9	10/21 - 10/23	FALL BREAK (M,Tu).
10	10/26 - 10/30	
11	11/2 - 11/6	Interp 4. Quiz 2.
12	11/9 - 11/13	Paper Due.
13	11/16 - 11/20	Paper Peer-Review Due. Interp 5.
14	11/23 - 11/24	Paper Presentations. THANKSGIVING BREAK (W-F).
15	11/30 - 12/4	Interp 6. Quiz 3.
16	12/7 - 12/9	Reading Day (Th).
Final's Week	12/12 (6:30-9:30pm)	Final Exam.