

IAP Course Proposal

Building Programming Experience, A lead-in to 6.001

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Objective

This course will serve as an aggressively gentle introduction to programming for those students who lack background in the field. Specifically targeted at students with little or no programming experience, the course seeks to reach a set of students that are normally turned away from 6.001 and course 6 because they feel they lack the prerequisites.

The main focus of the course will be acquiring programming experience: instruction in the programming fundamentals coupled with lots of practice problems. It will be aggressive in the amount of programming required, but gentle due to the support delivered to the students.

Structure

6 units of P/D/F credit during IAP.

Delivery

- 9 days long (probably January 10th-21st)
- 3 hours of class per day
- 2 hours of homework per day

Evaluation

- 7 problem sets, each due the next day
- 1 quiz, designed to be a scaled-down version of 6.001 quiz 1

Syllabus

1. Problem visualization
2. Basic scheme
3. Debugging
4. Writing procedures
5. Recursive solutions
6. Lists and Data structures
7. Higher-order procedures

Resources

Due to the interactive nature of the lab sessions, a high instructor to student ratio is necessary.

- One primary instructor¹ leads the lectures and develops the problem sets and quiz. This position is enough work (preparing and delivering) and responsibility to merit a TA-ship.
- A set of 4 secondary instructors help run lab. A couple of people should be available outside of class time for help with problem sets. The secondary instructors are drawn from the pool of lab assistants and would each be working 3-4 hours a day.
- Either a teaching cluster or a laptop loaner program.²

Assessment

Student performance will be tracked during 6.001 and compared with those students who lack programming background but did not take part in the IAP course. Additionally, their subsequent choice of major could be tracked.

¹If I get research funding for next term, I may have to bow out and find someone else to take over.

²One option being explored is using the TEAL room.