CMPU-101 Problem Solving and Abstraction
Fall 2016 Syllabus

<table>
<thead>
<tr>
<th>Professor</th>
<th>Jenny Walter</th>
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<tbody>
<tr>
<td>Office</td>
<td>Sanders Physics 306</td>
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<tr>
<td>Office hours:</td>
<td>Wednesday: noon to 3:00 pm, Thursday: 3:00 to 4:00 pm</td>
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<tr>
<td>Prof’s Email</td>
<td>jewalter at vassar dot edu</td>
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<tr>
<td>Section 01 Lecture</td>
<td>MON-WED 10:30 to 11:45 AM in SP 309</td>
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<tr>
<td>Section 01 Lab</td>
<td>MON 3:10-5:10PM, SP 309</td>
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<td>Section 05 Lecture</td>
<td>TUE-THU 1:30-2:45PM, SP 105</td>
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<tr>
<td>Section 05 Lab</td>
<td>TUE 3:10-5:10PM, SP 307</td>
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Textbooks/Readings:

All readings are available on-line and all assignments will be submitted electronically and returned on paper. For assignments, you will receive graded copies of your programs and their output on paper.

- Course notes prepared by Professor Luke Hunsberger and modified by your professor will be posted with the lecture notes as pdf files.

Course Prerequisites

The course is suitable for both CS majors and non-majors. No previous programming experience is required (although knowledge about using web browsers is helpful).

Course Goals

- To learn to solve problems on computers using the functional programming languages Racket and Swindle.
- To learn to enjoy the creative process of programming (it really is an art and it really is fun).
- To prepare you for learning other computer languages.
- To see, through examples, how programming can be used in different disciplines and different problem domains.

Advice on being successful in this class

Keep up with the reading and assignments. Topics build on one another. Please contact or visit me if you have any questions or concerns about the coursework, or if there is anything you would like to discuss. If you can’t make it to my office hours, let me know and I can possibly arrange to meet with you at another time.

Read your e-mail regularly because I will most often communicate with you by sending an e-mail to your Vassar e-mail address. E-mail is the best way to reach me. I will answer emails as quickly as possible. My e-mail address is given at the top of this page.

Out of consideration for your professor and the other students, please come to class and labs before the scheduled start time and avoid, as much as possible, wandering in and out of the classroom during lectures.
Programming Style

Writing a program to solve a problem is in many ways analogous to writing an essay. You should strive to write elegant, non-repetitive, and well-documented code. Writing unorganized, hard-to-read code will earn you a similar grade to that which you might expect to get for writing unorganized, hard-to-read essays in an English class.

Do not wait until the last minute (or even the night before the assignment is due) to start a programming assignment! Spend some time thinking about how to solve a problem before you actually start typing...it can save you lots of time and headaches.

Getting programming help from coaches

Our department hires students who have already taken this class to answer your questions in lab. The coaches are not supposed to help you write your programs; they are there only to answer questions about errors in your code. Your first resort for help with your code should be your professor.

Each coach also holds a number of office hours each week. The schedule of office hours will be posted after the start of classes.

Course Mechanics

Programming Tools

You will use an Integrated Developers' Environment (IDE) called DrRacket to create and edit your programs. The benefits of using an IDE like DrRacket will become apparent as you begin programming. You can download the DrRacket IDE for free using the link on the left sidebar. For help with installation, bring your laptop to OLB and your professor or one of the coaches will help you install the software.

Lectures

The lectures will be used to present new material, with lecture notes posted on-line. If possible, lectures will use live programming sessions to analyze and test the concepts being presented. Program code from these sessions will typically be posted on the course web page just before lectures. The material covered each week will build on what was covered in prior weeks. Lecture and lab attendance is mandatory and unexcused absences will be noted and taken into serious consideration when calculating your final grade. Three unexcused absences will result in lowering of your overall course score. Further extensive unexcused absences could result in your failing the course.

During lecture sessions, you are encouraged to log in to your computer science account on our lab machines or your own laptop to access the following: the course Moodle page, links on the course web page, the terminal window, and DrRacket. The use of computers in lecture or lab to surf the web, use FaceBook, Twitter, or any other computer applications that are unrelated to course content is bad! This restriction is a matter of common courtesy because what is on your screen can distract the students sitting behind you and most certainly keeps you from paying close attention to lecture.

Turn off all cell phones while in lectures.

Assignments

To reinforce the concepts you will be studying, you will construct programs of increasing complexity and sophistication throughout the semester. Your solutions to the assigned problems will be used to assess your
understanding of the topics presented. Assignments are graded, amount to 20% of the course grade, and should be taken seriously.

5% of the total score on assignments will be deducted for each day (including weekend days) an assignment is late unless your professor receives an official excuse that covers every day after the homework deadline until the time your homework is submitted. Extensions on assignment submissions will be granted only in the event of illness or other excused absence. All excuses must come through the Dean of Studies office or through Baldwin Health Services.

All assignments must be done individually. No collaboration of any kind is allowed. Any cases of inappropriate collaboration (cheating) have to be reported to the department chair, and will be dealt with promptly.

Assignments will be submitted, graded, and returned on paper. It is NOT OK for you to e-mail me an assignment or lab unless I give you permission to do so. If you are having trouble submitting your folders, print a copy of your program on the third floor Asprey printer before the submission deadline and put the paper copy under your professor’s office door. You will have to submit your assignment electronically even if you have already turned in a paper copy.

Solutions to assignments will be posted before exams. No submissions will be accepted or credit given after solutions are posted.

Labs
This course has weekly lab sessions held in SP 309 and SP 307. The computers in all our labs run the Linux operating system and have DrRacket software that we will be using throughout the semester. When you are finished with each lab, you should ask the professor (or a lab coach) to verify that you have done the work and record your presence in lab. It is your responsibility to make sure you are checked off by a coach or your professor before leaving the lab.

A typical lab session will involve you opening the lab instructions from the Labs link on the left side of the course web page. You may be asked to download a starter file into your account. Your professor and several coaches will be present during labs to answer questions and to help you write the lab programs. Collaboration on lab problems with your classmates is allowed during lab.

Lab submissions will not be graded. You are expected to attend every lab and be checked off as having completed the lab by a coach or your professor. You must have a valid excuse from the Dean of Studies or Baldwin Health Services for any missed labs or you will receive no credit for the lab. Solutions to lab problems will be covered in class after the labs are finished.

Exams
There will be one midterm and a final exam during the regularly scheduled final exam period. These exams will be paper-and-pencil style and closed notes.

If you are unable to take the exam on the date scheduled, it is your responsibility to notify your professor in advance to make other arrangements and all arrangements must be approved by the Dean of Studies.
Grading

Your final grade for the course will be calculated roughly according to the following distribution of coursework:

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<tr>
<th>Percentage</th>
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<tbody>
<tr>
<td>20%</td>
<td>Assignments (6 to 8)</td>
</tr>
<tr>
<td>15%</td>
<td>Weekly Labs (8 to 11)</td>
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<tr>
<td>5%</td>
<td>Class Participation (including lecture attendance and office visits)</td>
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<tr>
<td>30%</td>
<td>Midterm exam - to be announced</td>
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<tr>
<td>30%</td>
<td>Final Exam - location and time to be announced</td>
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Note: Although higher numerical scores will necessarily receive higher grades, I do not feel bound to follow the frequently used 90/80/70/60 cut-offs. Programming is as much an art as it is a logical process and superior performance will be rewarded. No extra credit work will be given. Pluses or minuses on the final grade may be added at the discretion of your professor.

Academic Integrity

Don’t cheat. Read *Originality and Attribution: A guide for student writers at Vassar College*. Copying someone else’s code without attribution amounts to plagiarism. Likewise, give proper attribution for the help you receive. School policy dictates instructors must report all suspected incidents of cheating to their department chair. Please don’t put yourself or your professor in that position. When in doubt, ask your professor before seeking help from another source.

Academic Accommodations

Academic accommodations are available for students registered with the Office for Accessibility and Educational Opportunity. Students in need of ADA/504 accommodations should schedule an appointment with me early in the semester to discuss any accommodations for this course that have been approved by the Office for Accessibility and Educational Opportunity, as indicated in your AEO accommodation letter.