CMPSCI 119
Fall 2014
Introduction to Programming with Python

Professor William T. Verts

Class:

Lectures: Monday, Wednesday, Friday 1:25PM–2:15PM, ELAB 323.
Labs: Tuesday, Thursday, 1:10PM–2:15PM, Morrill III 212 (first-come, first-served).

Office Hours and Email:

LGRC A356, Tuesday and Thursday 2:00-3:30, and by appointment at our mutual convenience.

`verts@cs.umass.edu`	Personal, for asking questions.	Put CMPSCI 119 in the subject line.
`literacy@cs.umass.edu`	For submitting on-line materials.	Put CMPSCI 119 in the subject line.

I read all email daily, but do not expect a speedy reply. I might not reply at all if the question is something I can address in class. Do NOT email attachments to me; they will be deleted. Do not call me at home.

TA: The TAs will operate the lab sessions, hold office hours in LGRT 212, perform the grading, and be available to assist in all aspects of this course. Hours to be arranged. TA office is shared by all TAs and graders for all my courses.

Books: ***Introduction to Computing and Programming in Python – A Multimedia Approach***, 3RD Edition
Mark Guzdial & Barbara Ericson, 2013, ISBN 978-0-13-292351-4, $85, Pearson (Prentice Hall***).***

Computer Science Companion, 1ST Edition, 2014 Printing, ISBN 978-1-4652-6047-5, ~$22, by me,

Web: `http://people.cs.umass.edu/~verts` (then follow the link to the 119 page), or:
`http://people.cs.umass.edu/~verts/cmpsci119/cmpsci119.html`
`http://people.cs.umass.edu/~verts/cmpsci119/quizzes/quizzes.html`

Twitter and other Social Media:

My personal Twitter feed is `wttvvv`, but I do not often post messages. Please do not "friend" me on Facebook, Linked-In, or other social networks. I reserve Facebook for relatives, hiking buddies, and friends from high-school.

Course Scoring (percentages may change according to number and type of assignment):

Midterm 1	15% (open book, Friday, October 3)
Midterm 2	15% (open book, Monday, November 10)
Final Exam	25% (open book, Friday, December 12, 1:00PM-3:00PM, Marcus 131)
Homework	15% (formally assigned homework, in-class exercises and quizzes, on-line exercises, etc.)
Projects:	30% (singly, but there may be small group projects)

Letter grades will be assigned according to final computed course score:

A ≥ 90%, A- ≥ 88%, B+ ≥ 86%, B ≥ 80%, B- ≥ 78%, C+ ≥ 76%, C ≥ 64%, C- ≥ 62%, D+ ≥ 60%, D ≥ 50%, F < 50%. Missing any exam incurs an automatic F for the course. Fractional final course scores are rounded to the nearest integer. For example, 87.49999 rounds down to 87 (B+), while 87.50000 rounds up to 88 (A-).

Computer: You may use either a Windows PC or an Apple Macintosh. The programming environment that we will use is the JES (Jython Environment for Students), located at `http://code.google.com/p/mediacomp-jes/` for free download. There are versions that run on both PCs and Macs. In addition, "standard" versions of Python may be downloaded from `http://www.python.org/`, and Mac users have Python already installed, accessible from the Terminal application. From time-to-time I will demonstrate software that runs only on a PC; Mac users may wish to install Parallels and Windows 7, or Crossover Mac, to run these programs.

Notes:

1. **DO YOUR OWN WORK, INCLUDING HOMEWORK AND LAB WORK.** You may discuss homework and lab assignments with other students, but you may not share files or disks. Upon discovery of duplication, I will contact you for a conference, as required in the guidelines set out by the University of Massachusetts Academic Honesty Policy, and we will resolve the issue according to those guidelines. See the document at: **`http://www.umass.edu/dean_students/codeofconduct/acadhonesty/`**

2. **Do not** ask for extra work after the end of the semester to boost an undesirable grade. I never grant such requests.

3. Please contact me directly if you have any concerns about the running of the course, the TA, grading, etc.

Day-By-Day Schedule (Tentative):

	Monday	Wednesday	Friday
1	**September 1** – Labor Day Holiday	**September 3** – First Lecture – Intro to course. What is programming all about?	**September 5** – Data, data types. Interactive Python.
2	**September 8** – Simple programs, Python def statement. Simple I/O statements.	**September 10** – Python if statements. The pass statement.	**September 12** – More on def, parameter passing. Python while statement.
3	**September 15** – Lists, tuples, and strings, simple functions. JES I/O functions.	**September 17** – while loops with lists and ranges, for loops with ranges.	**September 19** – List comprehensions.
4	**September 22** – Introduction to graphics. Canvases and pixels.	**September 24** – Graphics a la JES. Lines, rectangles, ovals, circles, color.	**September 26 –** More on Color. Bounce box. Time delays. Intro to image processing.
5	**September 29** – Image processing on one pixel at a time.	**October 1** – Special Topics, Review for midterm.	**October 3** – **MIDTERM #1**
6	**October 6 –** Random numbers. Sierpinski Gasket.	**October 8** – Image filtering. Command-line programming. Boolean & character functions.	**October 10** – Image mirroring and flipping.
7	**October 14 (TUESDAY)** – Passing functions as parameters in Python.	**October 15** – 3x3 filters (blur, edge detect, etc.)	**October 17** – In-class exercise with TA (I am away all day).
8	**October 20** – Dithering and rotation of images.	**October 22** – Hierarchical decomposition in graphics. Nested functions. Sprites in 2D.	**October 24** – Catch-up day.
10	**October 27 –** String slicing and dictionaries in Python.	**October 29 –** Introduction to 3D orthographic projections.	**October 31 –** Special Topics, Review for midterm.
11	**November 3** – **MIDTERM #2**	**November 5** – Linear blending in 2D and 3D, color blending. 3D lines.	**November 7 –** Blending parabolas. 3D to 2D Projections, global variables.
12	**November 10 –** 3D Lines.	**November 12 –** Tuesday Class Schedule.	**November 14 –** 3D Polygons, image scaling.
13	**November 17 –** Polygon fill.	**November 19 –** Text and Sounds in JES.	**November 21** – Reading and Writing to files.
14	**November 24** – Emitting HTML & SVG from Python.	**November 26** – More HTML and Python from UNIX. Intro to the Sunrise project.	**November 28** – Thanksgiving Holiday
15	**December 1** – Nested functions. Complex Math.	**December 3** – Catch-up Day	**December 5** – Last Day of Class, Review for Final Exam