ISC4304-1 PROGRAMMING for SCIENTIFIC APPLICATIONS Spring 2017

Instructor

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Teaching Assistant

Philip Boehner
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Lectures (Beerli):

Tuesday, Thursday 11am-12:15pm
DSL152

Lab-session (Boehner):

Tuesday 3:15pm - 5:45pm
DSL 152

Office Hours

Tuesday 12:10pm-1:10pm or by appointment (Beerli)
Thursday 3:15pm-5:45pm (Boehner)

Textbook

No textbook required

Overview

This course provides knowledge of a scripting language (python) that serves as a front-end to popular packages and frameworks, along with a compiled language (C++). Students will study and practice object-oriented scientific programming with the scripting and compiled language. In the laboratory component of the course students will apply the concepts learned in several science applications. Prerequisite: MAC 2312.

Objectives

- to understand the benefits of interpreted and compiled languages and know when to use each one to best advantage
- to understand Python sufficiently to program applications with confidence
- to understand C++ sufficiently to write modules that are used in python
- learn to interface C++ and Python to each other, to take advantage of the best features of both languages
- through lab work, develop the skills to apply Python and C++ to a range of practical scientific applications, ranging from processing of scientific data to visualization.

Grading

The grade for the course will be based upon labs, homework, a midterm and a final exam. This work is weighted as follows:

- Midterm Exam (March 9 Thursday 11:00am-12:15pm)- 25%
- Final Exam (May 4th Thursday 7:30am-9:30am) - 20%
- Homework (weekly with lapses) - 20%
- Quizzes (irregular) - 10%
- Labs (weekly) and attendance - 30%

Final grades will be given as:
A: 100-93, A-: 92-90, B+: 89-87, B: 86-83, B-:82-80, C+: 79-77, C: 76-73, C-: 72-70, D+: 69-67, D:66-63,D-:62-60, F 59-0); rounding as usual at 0.5.

Attendance

Students are required to attend all classes. Exemptions are only excepted for sickness and the attendance of scientific conferences. Students, not the professor, are then responsible for bringing themselves up to date both on subject matter covered during class, as well as completing homework assignments in a timely manner. Information given in class supplants information provided on the course web site.

Courtesy

Keep your cell phone in your pocket!
You should get to class on time (quizzes will start on 11:00am and will not last longer than 10 minutes), and remain until class is dismissed. If you must leave class early, please let the instructor know before class begins.

Assignments

The assignments consist of homeworks, lab-reports.

- Homework: Each **homework** assignment must be sent as a PDF to beerli@fsu.edu. The subject line MUST consist of **ISC-4304: homework homeworknumber**, the attached PDF MUST have a filename with your lastname and the homework-number, for example beerli1.pdf, boehner2.pdf. I will deduct 10 points (out of 100) for not following these submission guidelines. Contents for each homework will be graded for correctness and being concise, but wordy enough that I can follow your thought-process.
- Lab reports: Each lab-report must be sent to Philip Boehner (pb12c@my.fsu.edu). The subject line MUST consist of **ISC-4304: lab labnumber**. Each lab assignment consists usually of a short report that includes instructions how to run the (python) program, and the source code. The lab-report must be formatted as a PDF and has a filename with your lastname and the lab-number, for example beerli1.pdf or boehner2.pdf. The report **and** the programming source used to generate the results must be packaged into a single zip or tar.gz archive and attached as a **single** attachment to the email. Deviations, such as submitting multiple attachments, submitting the report as word file, or packaging both as a .rar file will be penalized by 10 points out of 100.

We may compare homework, and lab reports using Turnitin and other comparison tools.

Late Assignments

You can turn in ONE laboratory assignment and ONE homework late with no questions asked and no penalty; however, the assignment must be turned in no later than 1 week after its due date. Additional late assignments will be penalized by applying a graded scale which terminates with a 25% reduction at the end of one week; no homework or assignments will be accepted more than a week past the due date. Exceptions to these rules are made only if extenuating circumstances (such as illness, etc.) arise which can be documented.

University Attendance Policy

Excused absences include documented illness, deaths in the family and other documented crises, call to active military duty or jury duty, religious holy days, and official University activities. These absences will be accommodated in a way that does not arbitrarily penalize students who have a valid excuse. Consideration will also be given to students whose dependent children experience serious illness.

Academic Honor Policy

The Florida State University Academic Honor Policy outlines the Universitys expectations for the integrity of students academic work, the procedures for resolving alleged violations of those expectations, and the rights and responsibilities of students and faculty members throughout the process. Students are responsible for reading the Academic Honor Policy and for living up to their pledge to *"... be honest and truthful and ... [to] strive for personal and institutional integrity at Florida State University.* (Florida State University Academic Honor Policy, found at http://dof.fsu.edu/honorpolicy.htm.)

Americans With Disabilities Act

Students with disabilities needing academic accommodation should: (1) register with and provide documentation to the Student Disability Resource Center; and (2) bring a letter to the instructor indicating the need for accommodation and what type. This should be done during the first week of class. This syllabus and other class materials are available in alternative format upon request. For more information about services available to FSU students with disabilities, contact the:

Student Disability Resource Center
874 Traditions Way 108
Student Services Building
Florida State University
Tallahassee, FL 32306-4167

voice: (850) 644-9566
TDD: (850) 644-8504
sdrc@admin.fsu.edu
http://www.disabilitycenter.fsu.edu/

Free Tutoring from FSU

For tutoring and writing help in any course at Florida State University, visit the Academic Center for Excellence (ACE) Tutoring Services comprehensive list of tutoring options - see http://ace.fsu.edu/tutoring or contact tutor@fsu.edu for more information. High-quality tutoring is available by appointment and on a walk-in basis. These services are offered by tutors trained to encourage the highest level of individual academic success while upholding personal academic integrity.

Syllabus Change Policy

Except for changes that substantially affect implementation of the evaluation (grading) statement, this syllabus is a guide for the course and is subject to change with advance notice.