Syllabus

Course Title

Python for Genomic Data Science

Course Instructors

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Course Description

This class will provide an introduction to the Python programming language to people who are not computer scientists but who want to analyze genomic data. The course will teach participants basic concepts of bioinformatics programming, and introduce them to computational tools that deal with large amounts of data. The goals of the class is to enable students to write basic programs in Python, to adapt existing programs to their needs, and to interface Python programs with various bioinformatics packages through the use of Biopython.

Course Content

- Overview of Python
- First Steps Toward Programming
- Data Structures
- Ifs and Loops
- Functions
- Modules and Packages
- Communicating with the Outside
- Biopython

Weekly quizzes

There are eight quizzes. You may begin submitting them as soon as the course opens. Quizzes 1 & 2 is due at the end of the first week, Quizzes 3 and 4 is due at the end of the second week, Quizzes 5 and 6 is due at the end of the third week, and Quizzes 7 and 8 are due at the end of the fourth week.

Quiz Scoring

You may attempt each quiz up to 3 times in 8 hours. The score from your most successful attempt will count toward your grade.

The Final Exam

The Final Exam is due by the end of the fourth week. Begin the exam by thoroughly reading the Final Exam Instructions. After you have written your program(s), start the Exam. Be sure to download and use the FASTA file at the top of exam question 1 in order to produce the correct answers.

Grading policy

You must receive a final grade of 70% or better on each assignment (quizzes and project) to pass the course.

Your final grade will be calculated as follows:

Quiz 1 = 8%

Quiz 2 = 8%

Quiz 3 = 8%

Quiz 4 = 8%
Quiz 5 = 8%
Quiz 6 = 8%
Quiz 7 = 8%
Quiz 8 = 8%
Final Exam = 36%

Differences of opinion
Keep in mind that currently data analysis is as much art as it is science - so we may have a difference of opinion - and that is ok! Please refrain from angry, sarcastic, or abusive comments on the message boards. Our goal is to create a supportive community that helps the learning of all students, from the most advanced to those who are just seeing this material for the first time.
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