Introduction

This is a special topic course designed for students who took GMS6014 and want to gain more hands-on experience in applying bioinformatics and computational approaches to solve real research problems. Unlike GMS6014, this course focuses on programming and the development of new software tools to solve biological problems (as opposed to simply using existing tools). Prior programming experience is desirable but not required; on the other hand, students should be prepared to demonstrate a strong commitment towards learning a programming language.

The course will span two modules (2-3) in the spring semester. Students will be introduced to the Python programming language and to the BioPython libraries; they will then take a bioinformatics project and develop it through the 10-week period. The project will be assigned by the instructor but will chosen in agreement with the students in order to be pertinent to their research work, if possible. Examples of suitable projects include comparative analysis of sequences, automated data extraction and integration, modeling a biological process.

Course schedule

Class will meet once a week, tentatively on Wednesdays from 1pm to 2:30pm. The schedule will be finalized prior to the start of the course in agreement with enrolled students. There will be two types of class meetings. The lectures (6) will provide the students with the theoretical and practical background needed for the development of their project. The discussion classes (3-4) will be devoted to discussing the planning of the projects and their development strategy in a “learn-from-peer” environment.
Books and equipment

A laptop computer able to connect to the HealthNet wireless network is required. Linux is the preferred operating system, but MacOSX and Windows are acceptable as well. Students are encouraged to contact the course director prior to the start of the course to ensure that their laptop meets the technical requirements for the course. No books required.

Grading

Grades will be assigned on the basis of the developed project, and of class attendance.

Academic honesty

As a result of completing the registration form at the University of Florida, every student has signed the following statement: "I understand that the University of Florida expects its students to be honest in all of their academic work. I agree to adhere to this commitment to academic honesty and understand that my failure to comply with this commitment may result in disciplinary action up to and including expulsion from the University".

Accommodations for students with disabilities

Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodations.
UF counseling services

Resources are available on campus for students having personal problems or lacking clear career and academic goals, which interfere with their academic performance. These resources include:

1. University Counseling Center, 301 Peabody Hall, 2-1575, personal and career counseling;
2. Student Mental Health, Student Health Care Center, 2-1171, personal counseling;
3. Sexual Assault Recovery Services (SARS), Student Health Care Center, 2-1161, sexual assault counseling;
4. Career Resource Center, Reitz Union, 2-1601, career development assistance and counseling.

Course website

http://genome.ufl.edu/courses/GMS6232/

Course Instructors

Dr. Alberto Riva (ariva@ufl.edu), course director;
Dr. Lei Zhou (leizhou@ufl.edu), course co-director;
Dr. Luciano Brocchieri (lucianob@ufl.edu).

Office hours

By appointment.