

BIOS 428/828 Perl Programming for Biological Applications (3 credits)

Instructor

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Time: Tue 15:30 to 16:45 (lecture) and Thu 15:30 to 17:20 (computer lab)

Classroom: Tue N176 Beadle Center; Thu CBA 12

Prerequisites: 12 hrs biological sciences, and permission. No programming or statistics required.

Registration information: Call # 8781/8780

Course web: <http://bioinformatics.unl.edu/courses/Perl>

Office Hours: The instructor is normally in the Beadle Center during normal working hours, M–F, except for class periods and other University assignments. You are welcome to drop by without an appointment, but it is strongly recommend that you email for an appointment to be sure that he can meet with you.

Textbook:

- Required: Curtis Jamison, D. (2003). Perl Programming for Biologists. John Wiley and Sons, Inc., Hoboken, New Jersey. ISBN 0-471-43059-5.
- Recommended: Schwartz, Randal L. et al (2005). Learning Perl (4th edition). O'Reilly Media, Inc. ISBN 0-596-10105-8

Course description

This course teaches the student the basic skills of computer programming, using the Perl programming language. The Perl language is widely used in the biological sciences, and as such this course will use those domains to exemplify concepts learned during this course. Although Perl is especially prevalent in computational biology, bioinformatics, and genomics the course will demonstrate how Perl can be applied to a wider range of biological sciences (from the instructor's own experience), including but not limited to agronomy, ecology, ethology, and microbiology.

It is understood that real expertise in programming comes with a lot of practice: this course will not make the student a highly skilled programmer but will lay a strong foundation in the general concepts and will demonstrate that it is relatively easy to use Perl for the student's (future) biological research topics where data processing and analysis is required.

Course preparation

Students are expected to be familiar with the use of computers for day-to-day activities (internet browsing, e-mail, word processing). Familiarity with text editors and some Unix is recommended, but not absolutely necessary as this will be covered in the course.

Some general biological knowledge is recommended since a lot of the examples during the lecture and the exercises during the computer lab work will be geared towards it. No statistical or mathematical background is required nor expected, although the course does cover some of the basic concepts.

For the final programming assignment the student will need access to a computer, preferably internet enabled. Arrangements can be made to use the Beadle Center's Bioinformatics Core Facility (contact: instructor).

Course requirements and grading

The student is required to be present at the computer lab as **the exercises there will make up 40%** of the final grade. The other **60% is based on a final assignment**, which the student needs to start at the latest two weeks prior to the last course date (following the 15th week/Final Exam policy the assignment will be given in the 8th week of the course).

For graduate students it is required that they will come up with their own idea for a final assignment – this can take the form of a project that can be used for their current graduate (research) work. In all cases of own final assignments, both for graduate or undergraduate students, a two-page proposal should be submitted to the instructor and a meeting scheduled before commencement of such.

All grade break percentages are as follows: A+ (95%), A (90%), A- (87%), B+ (84%), B (80%), B- (77%), C+ (74%), C (70%), C- (67%), D+(64%), D (60%), F < 60%

Instructor will allow one absence from computer lab, no questions asked. Other absences only permitted for valid excuses such as:

- Illness, documented by a signed statement from a physician in the University Health Service or in private practice.
- A request from another University professor to excuse a student for participation in another class or in officially sponsored activities. For example, participation in an extended field trip for another class or competing with an officially recognized athletic team may constitute an acceptable excuse. Validation of these kinds of excuses must precede the absence.

Course home page and Blackboard

This web site is used to post the general information related to this course. [Blackboard](#) will be used to distribute email messages, final assignment, grade information, discussion material, *etc.* IMPORTANT!! Check your email address on your blackboard account. Otherwise, you may miss some important messages.

