

Perl Programming for Bioinformatics
Summer Semester 2008
3 credit hours
Undergraduate: BSC: 492 (Reg. code: 5168)
Graduate: BSC: 692 (Reg. code: 8257)

Course	Perl Programming for Bioinformatics
Course Homepage	http://mcbc.usm.edu/courses/
Meeting Time & Location	3 – 5:10, TTH
Instructor	Mehdi Pirooznia, PhD
Contact Information	Email: mehdi.pirooznia@usm.edu Phone: (601) 266-4353
Office	JST 1010

Textbooks	Perl: The Complete Reference ISBN: 0072129506 Author/Editor: Martin C. Brown Publisher: McGraw-Hill Osborne Media Publishing date: January 2001
	Beginning Perl for Bioinformatics ISBN: 0596000804 Author/Editor: By James Tisdall Publishing date: October 2001



Prerequisites There are no specific pre-requisites required for this course. It is designed to teach students how to write and run their own programs using the Perl programming language.

Course Description This course introduces fundamental concepts and techniques of Perl programming as an important skill. Perl is a friendly yet powerful computer programming language. Although Perl is a general-purpose language, yet, it is highly suitable for bioinformatics. Students can start writing useful programs right from the beginning of the course for their biological data.

Objectives

At the end of the course the students will be able to:

- Program using all basic elements of Perl- data types, variables, operators, flow control, I/O.
- Select and design the most appropriate data structures (array, hash, etc.) for Perl applications
- Manipulate a wide range of data formats
- Write programs for sequence analysis
- Provide a Web interface to programs using CGI scripts

Class Schedule

- Concepts in molecular biology
- An overview of programming
- Scalar Data, Arrays
- Control Structures
- File I/O, Basic Text Processing
- Standard Perl Modules
- Hashes, Sorting, Loop Control
- References and Data Structures
- DNA Sequences and Strings
- Regular Expressions
- GenBank formatting
- BLAST results, automation & post-processing
- CGI Programming

Grading

course grade consist of 2 components:

Components	Weight
Homework	40%
Mid and final exam	60%

Course grading scale

- 90 to 100 A – Excellent work
- 80 to 89 B – Good work
- 70 to 79 C – Average work
- 60 to 69 D – Inferior work
- 0 to 59 F – Fail

Attendance

Students are expected to attend all classes.

Academic Honesty

Students are expected to do their own work on all assignments, projects and tests except the assignments are indicated as team work. Assignments that appear to be substantial duplicates of other submitted student work will be treated as instances of academic misconduct. The following text is extracted from the USM Undergraduate Bulletin:

“When cheating is discovered, the faculty member may give the student an F on the work involved or in the course. If further disciplinary action is deemed appropriate, the student should be reported to the Dean of Students. In addition to being a violation of academic honesty, cheating violates the Code of Student Conduct and may be grounds for probation, suspension, and/or expulsion. Students on disciplinary suspension may not enroll in any courses offered by The University of Southern Mississippi.”

DAD Policy

If a student has a disability that qualifies under the **Americans with Disabilities Act (ADA)** and requires accommodations, he/she should contact the Office for Disability Accommodations (ODA) for information on appropriate policies and procedures. Disabilities covered by ADA may include learning, psychiatric, physical disabilities, or chronic health disorders. Students can contact ODA if they are not certain whether a medical condition/disability qualifies. Address: The University of Southern Mississippi, Office for Disability Accommodations, 118 College Dr. #8586, Hattiesburg, MS 39406-0001, Voice Telephone(601) 266-5024, Fax(601) 266-6035. Individuals with hearing impairments can contact ODA using the *Mississippi Relay Service* at 1-800-582-2233 (TTY) or email Suzy Hebert at suzanne.hebert@usm.edu