CMSC423: Bioinformatic Algorithms, Databases and Tools
Lecture 1

Instructor: Mihai Pop

TuTh 11-12:15 CSIC 1122

INTRODUCTIONS

- Instructor: Mihai Pop (mpop at umiacs.umd.edu)
  http://www.cbcb.umd.edu/~mpop
  Office hours: Thursdays 1-2pm, AVW 3223

- TA: MohammadReza Ghodsi (ghodsi at cs.umd.edu)
  Office hours: Mondays+Wednesdays 1-2pm,
  AVW 1112

- You

Class webpage:
  http://www.cbcb.umd.edu/confcour/CMSC423.shtml

What is bioinformatics?

- Biology can be viewed as an information science (e.g. DNA is just a string of letters)

- Computers are essential in generating, managing, and analyzing biological data

- "Bioinformatics" or "Computational Biology" encompasses all applications of computers to the analysis of biological data

Why study bioinformatics?

- Exciting field! Help biologists figure out what life is all about.

- Work with people different from you – bio-geeks

- Many programmer/software engineer jobs in biotech industry currently filled by biologists – great need for people with CS backgrounds

Overview of course

- No knowledge of biology required
- Will cover areas of interest in CURRENT bioinformatics research
- Overall flow: data management (databases), data generation (sequencing), data analysis (extracting meaning)
- Examples based on real data (note: instructor spent 5 years in a biotech research institute)

Policies

- Attendance - follow University policy
  - written documentation of illness is required (from Dr.)
  - if possible inform me prior to the class you will skip

Students claiming an excused absence must apply in writing and furnish documentary support (such as from a health care professional who treated the student) for any assertion that the absence qualifies as an excused absence. The support should explicitly indicate the dates or times the student was incapacitated due to illness. Self-documentation of illness is not itself sufficient support to excuse the absence. An instructor is not under obligation to offer a substitute assignment or to give a student a make-up assessment unless the failure to perform was due to an excused absence. An excused absence for an individual typically does not translate into an extension for team deliverables on a project.

- Additional reasons
  - Lectures trump book
  - Homework/exam solutions only presented in class
  - Other information only provided in class

Policies...cont

- Disabilities
  - must inform me during the first 2 weeks of the semester if special accommodations necessary
  - request letter from Office of Disability Support Service

  Any student eligible for and requesting reasonable academic accommodations due to a disability is requested to provide, to the instructor in office hours, a letter of accommodation from the Office of Disability Support Services (DSS) within the first two weeks of the semester.

- Religious observance
  - must inform me during first 2 weeks of class of any special accommodations
  - no additional requests will be accepted after this deadline

Policies...cont

- NO LAPTOPS
  - Caveat: If you absolutely need a laptop for note taking:
  - 1. You must inform me within first 2 weeks of class
  - 2. You must submit your notes by email to me before leaving class
  - 3. Notes will be graded (negative points)
  - -2 points off final grade for every instance of incomplete or un-submitted notes, or for laptop use without approval
- General – communication is key
  - talk to me about any issues whether covered or not by University policies

Grading & workload

- Homework (10%)
- Goal: 5 assignments
  - exercises from textbook
  - small programming assignments
  - "discovery" exercises (find something in public databases or using public software)
- Programming projects (15% + 15%)
  - Project 1 – assigned by instructor
  - Project 2 – chosen by student
- 2 in-class midterms (25%) & final (35%)
- Late policy: 1 day late – 10 points off; 2 days late – 20 points off; 3 days late – 0 points

Academic Honesty

http://www.studenthonorcouncil.umd.edu/code.html

- No cheating on homeworks/projects/exams
- No making up data/results
- No copying of other people's code
- You can work together on homeworks/projects but WRITE THE ANSWER BY YOURSELF

I pledge on my honor that I have not given or received any unauthorized assistance on this examination.

Advice: how to do well in the class

- Start early on assignments – at least read the assignment after class
- Ask questions – during class, exams, office hours, using email (I'm available most time by email)
- Be inquisitive – follow up on topics discussed in class: Google, Wikipedia
- Be social – get to know some biologists – learn what they do, what they are interested in
- Get to know your colleagues

Policies...cont

- COMMUNICATION IS KEY!
  - talk to me about any issues whether covered or not by University policies
  - catch me after class, during office hours, or through email

- Note: add "CMSC423" to subject of your emails

Glue accounts

- ssh glue.umd.edu
- DIRECTORY: /afs/glue.umd.edu/class/fall2008/cmsc/423/0101

- Try it out and let me know if there are any problems!