## CHEM 388: Topics of Current Interest in Chemistry: Chemical Genomics Spring 2008

Instructor: Akira Kawamura, 1312N, <u>akawamur@hunter.cuny.edu</u>, 1-212-650-3095

Course Webpage: Hunter Blackboard

#### Time & Location:

Lecture	HN C111/HN 1312	Mon & Thu 9:45 – 11:00 AM
Office hour	HN 1312	Mon & Thu 11 AM – 12 PM
Midterm exam	HN C111	Thu Mar 20, 9:45 – 11:00 AM

Pre-requisites: CHEM 377 or BIOL 300 or permission of instructor

#### About this course:

- This is an advanced course designed for upper-level undergraduate and beginning graduate students interested in chemical and computational tools for genomics and proteomics research.
- The intention of this course is to introduce students to fundamental concepts that are employed in current genomics and proteomics research.
- **Molecular visualization (First half):** Students will refine their skills to visualize three dimensional structures of macromolecules (proteins, DNA, etc.) as well as small molecules (drugs, etc.). A series of computational exercises (MOE) will be used to help students learn how to visualize and analyze molecular structures.
- Chemical and computational tools for genomics and proteomics (Second half): Students will then be introduced to DNA microarray technology and chemical proteomics, which provide snapshots of transcriptome and proteome in cells.
- Lectures will be given mainly in the problem-solving format.
- Through literature analysis students will be exposed to current research activities at the interface of chemistry and biology.
- Students will be <u>required</u> to be fully prepared for each lecture/exercise (by completing homework assignments). Unprepared students will be asked to leave the class.
- Students will be required to actively participate in discussions during the class.

**Textbook:** Handouts and papers selected by the instructor.

### Exams & Grading (total 400 pts):

Mid-term examination (100 pts), Class participation (100 pts)\*, Final Presentation (100 pts) Final Report (100 pts)

\*Assessed based on your preparation and participation in the class (Being in the class does not automatically give you points).

**Academic dishonesty**: If any form of academic dishonesty is found, involved student(s) will be automatically given F with a note stating "Failed, due to academic dishonesty" on their transcripts. Student(s) will also be subjected to disciplinary actions according to the school guideline.

**Policy on Incomplete Grade:** Incomplete (IN) grade would be considered if a student maintained a passing grade (from the midterm exam and class-participation), but cannot complete the course because of unavoidable reasons, e.g., a medical and personal emergency. Documented proof will be required for the consideration of IN grade. However, it is noted that CHEM388 might not be offered in the near future.

"In compliance with the American Disability Act of 1990 (ADA) and with Section 504 of the Rehabilitation Act of 1973, Hunter College is committed to ensuring educational parity and accommodations for all students with documented disabilities and/or medical conditions. It is recommended that all students with documented disabilities (Emotional, Medical, Physical and/ or Learning) consult the Office of AccessABILITY located in Room E1124 to secure necessary academic

accommodations. For further information and assistance please call (212-772-4857)/TTY (212-650-3230)."

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Mon Apr 28Literature analysis 6: Chemical proteomicsHN C111Thu May 1Computational exercise 8: Analysis of proteomic profilesHN C111 then HN 1312Mon May 5Final presentations 1 (3-4 students)HN C111Thu May 8Final presentations 2 (3-4 students)HN C111Mon May 12Final presentations 3 (3-4 students)HN C111			-
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Thu May 8Final presentations 2 (3-4 students)HN C111Mon May 12Final presentations 3 (3-4 students)HN C111			
Mon May 12Final presentations 3 (3-4 students)HN C111	-		
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	Thu May 23	Final report due	

# Class & Exam Schedule: