Bioinformatics in Infectious Diseases (PGS 385W)
2017-2018 Academic Year
Thursdays Noon-4pm

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Office Hours: By appointment, Rm. 3.422

General Course Description:
The purpose of this course is to introduce graduate students to techniques for mining the large amount of information produced by recent advances in genome sequencing. Class sessions will consist of a formal instruction, discussion, and exercises (i.e., online training).

Recommended Texts:
There is no required text for this course.

Course Objectives:
At the completion of this course, the student will:
1. obtain a basic knowledge of the types of biological data and bioinformatics terminology
2. describe bioinformatics challenges that arise while analyzing biological data
3. develop an understanding of key applications in analyzing genomic data

Class Participation:
Students are expected to conduct themselves in a manner respectful of both faculty and fellow students in the classroom. Students should be punctual, as class will begin promptly at the scheduled start time. If you miss a class for any reason, you will be held responsible for all material covered and announcements made in your absence.

Examinations and Grading Policy:
The semester grade will consist of points accumulated from class participation, class assignments, and homework.

Class Participation: 20%
Journal Club Presentation: 30%
Research/Emerging Topic Presentation: 50%

Final Grade Policy:
90-100 = A    80-89 = B    70-79 = C

Academic Dishonesty:
Students are expected to work independently on assignments. Any student caught cheating will be given a grade of zero on that assignment. Acts of suspected academic dishonesty will be dealt with as per the College of Pharmacy Honor Code and University regulations. Students who violate University
rules on scholastic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course and/or dismissal from the University. Since such dishonesty harms the individual, all students, and the integrity of the University, policies on scholastic dishonesty will be strictly enforced. Also, you should refer to the Student Judicial Services website at http://www.utexas.edu/depts/dos/sjs/ to access the official University policies and procedures on scholastic dishonesty as well as elaboration on what constitutes scholastic dishonesty.

**Request for Appropriate Accommodations:**
Upon request, the University of Texas at Austin provides appropriate academic accommodations for qualified students with disabilities. For more information, contact the Office of the Dean of Students at (512) 471-6259 or 471-4641 (TTY).

**Course Schedule**

<table>
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<tr>
<th>Class Session</th>
<th>Topic</th>
<th>Instructor/Rm</th>
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| 1             | Course introduction
              | Introduction to Bioinformatics
              | Lee 3.422     |
| 2             | Reading assignment: “Life and Its Molecules” by Lawrence Hunter   |               |
| 3             | Big Data Challenges, Storage, and Resources                         | Saklad 3.422  |
| 4             | Student-Led Discussion
              | Topic: “Comparing Next Generation Sequencing Platforms”            | Lee 3.422     |
| 5             | Introduction to Basic Algorithms in Microbial Genomics              | Lee 3.422     |
| 6             | Introduction to Basic Algorithms in Microbial Genomics
              | [Asynchronous Assembly Assignment]                                   | Lee 3.422     |
| 7             | Microbiomes/Metagenomics                                           | Reveles 3.422 |
| 8             | Surveillance and Outbreak Analyses
              | Journal Club Assignments                                            | Lee 3.422     |
| 9             | Student-Led Discussion/Journal Club                               | Lee 3.422     |
| 10            | Topic: “Application of NGS approaches in the Clinical Laboratory”  | Lee 3.422     |
| 11            | Assignment: Assembling Antibiotics                                 | Lee 3.422     |
| 12            | Antimicrobial Resistance Predictions                                | Lee 3.422     |
| 13            | *Research/Emerging Topic Student Presentations                      | Lee 3.422     |

*Graded assignments