

# ***BINF 3121: Statistics for Bioinformatics***

## ***SYLLABUS***

### **A.) COURSE DESCRIPTION**

Concepts from probability, stochastic processes, information theory, and other statistical methods are introduced and illustrated by examples from molecular biology, genomics and population genetics while exploring the use of the R and Bioconductor software for biostatistical analysis.  
*(from course catalog)*

### **B.) PRE/CO-REQUISITES**

BINF 2111 (Bioinformatics Computing) and one of MATH 1103, 1120, 1121, 1241, STAT 120, 1221, 2122 or permission of instructor based on sufficient demonstration of foundational mathematics concepts  
*(paraphrased from Bioinformatics Dept Web site)*

### **C.) LEARNING OBJECTIVES**

- Learn concepts from probability, stochastic processes, information theory, and other statistical methods
- Learn to use statistical programming language R and Bioconductor software for data analysis

- Learn to analyze genomic data sets, focusing on what to do *after* computational processing (covered in BINF 2111) is complete

## **D.) INSTRUCTIONAL METHODS**

Students bring a laptop computer to class and do active learning exercises to master skills and concepts.

## **E.) GRADING**

Each assignment, exam, or quiz is awarded points based on level of difficulty and effort required. Grades will be awarded based on total percentage of points earned. A: 90 to 100% B: 80 – 89% C: 70 – 79% D: 60-69% F: <60%

## **F.) TENTATIVE SCHEDULE (WEEKLY, OR TOPICS)**

*Please see course Canvas site*

## **G.) POLICIES AND PROCEDURES**

### **a.ACADEMIC INTEGRITY**

All students are required to read and abide by the Code of Student Academic Integrity. Violations of the Code of Student Academic Integrity, including plagiarism, will result in disciplinary action as provided in the Code. Definitions and examples of plagiarism are set forth in the Code. The Code is available from the Dean of Students Office or online at: <http://www.legal.uncc.edu/policies/ps-105.html>. A set of links to various resources on plagiarism and how to avoid it is available at the UNCC Library website: <http://library.uncc.edu/display/?dept=instruction&format=open&page=920>.

### **b.ATTENDANCE**

Required.