

# **BIOLOGY 275: GENOME DISCOVERY AND EXPLORATION**

**ROOM: EBS 3109**

**MEETING TIMES: T/TH 2:20-4:20PM**

**SYLLABUS: FALL 2011**

## **INSTRUCTORS:**

Dr. Rodney King  
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**COURSE DESCRIPTION:** This course represents the first semester of a two part series that will engage novice scientists in research and inquiry based learning. This discovery based genomics initiative will guide students from organism isolation through genome annotation.

## **OBJECTIVES:**

1. To expose undergraduates to the excitement and challenges of true scientific discovery
2. To connect participating students and faculty in a common nationwide experiment so that they may share results, resources and expertise
3. To develop troubleshooting skills in real time
4. To introduce and provide experience with fundamental laboratory techniques necessary for the safe study of microorganisms
5. To become skilled in using bioinformatics research tools to facilitate genome finishing, annotation and comparisons
6. To develop skills in the areas of cognitive processing, analytical thinking and communication
7. To develop confidence to do independent research
8. To develop skills using techniques in microbiology, molecular biology and electron microscopy for the isolation and characterization of bacteriophage from the environment
9. To formulate testable hypotheses, make predictions and design experiments to address the hypotheses
10. To develop essential skills in record keeping, organization, planning and reporting

**REQUIRED TEXT:** The NGRI Phage Research Manual will be provided as downloadable PDF files. It is the student's responsibility to access these files from the course NGRI Wiki or the course blackboard site.

**REQUIRED SUPPLIES:** A lab coat

**ATTENDANCE/PARTICIPATION:** Attendance is required and all excused absences must be approved by the instructor in advance. Students must arrive on time and prepared. This is a research based course. You will be actively engaged in true scientific discovery and you should understand that this often requires work outside of scheduled lab times. You will be given access to the lab and other areas as needed to allow you to complete your work. Participation in class discussions, presenting data to classmates and other members of the SEA Alliance through the NGRI Wiki is required.

**LAB SAFETY:** Failure to follow the established safety guidelines will result in your dismissal from the course.

#### **GRADING:**

**Notebooks: 40%**

**Reading responses: 10%**

**Quizzes: 20%**

**Presentation: 10%**

**Participation/Class activities 10%**

**Final Phage Report: 10%**

The specific instructions and expectations for the items listed above will be provided in class.

#### **GRADING SCALE:**

**A = 90-100%; B = 80-89%; C = 70-79%; D = 60-69%; F = 59% and less**

#### **OTHER POLICIES:**

**DISABILITIES:** Students with disabilities who require accommodations (academic adjustments and/or auxiliary aids or services) for this course must contact the Office for Student Disability Services, Downing University Center A- 200. The phone number is 270-745-5004. Please DO NOT request accommodations directly from the professor or instructor without a letter of accommodation from the Office for Student Disability Services.

**ACADEMIC INTEGRITY:** It is expected that each student will do his/her own work at all times and contribute equitably in all group projects.

**ACADEMIC MISCONDUCT:** Dishonesty, in any form (cheating on quizzes plagiarism, copying answers etc.) will result in a failing grade.

**WITHDRAWALS:** If you wish to withdraw from the course, you should do so by the dates mandated by the University. Be sure you are aware of these dates because credit for the course will not be changed after the University designated time. You may not drop or withdraw from the class after the designated time. It is YOUR responsibility to drop the class. Do NOT assume that we will do this for you.

**CELL PHONES AND PAGERS:** Please turn off your cell phone (and/or beeper) or set it to vibrate.

**EMAIL:** The instructors may need to contact the student or the entire class outside the classroom time. The email address assigned by the University will be used for this purpose. It is the responsibility of the student to check this account regularly and respond to such communications as appropriate.