WELCOME TO BIOL 434 Spring 2019!
MOLECULAR MICROBIOLOGY

WHAT IS THE COURSE ABOUT?

Relative to our cells, the bacterial cell structure is relatively simple. Yet, these unicellular organisms employ intricate molecular strategies for sensing, responding, and adapting to their environment. BIOL 434 delves into the genetic regulatory mechanisms underlying these physiological processes in bacteria, such regulation of gene expression and growth, response to infection with bacteriophages, molecular determination of virulence, and phylogenetic relationships between organisms.

LOGISTICS

Lecture: Tu & Th 1:15 PM – 2:30PM in Sc-N221
Faculty Instructor: Dr. xxx
Office Location: Sc-S350
Office Hours : Tu: 3-4 PM, Th: 11am - 12pm, or by appointment
Visit http://signup.com/ to sign up for Tu &Th slots. 48hrs prior notice required for appointments.
Email:
***Preferred communication method.**
***Please write BIOL 497 in the subject line.**
***Reply **between 11 and 6pm**, except Sat & Sun

POLICIES

- **Feb 4th** : Last day to drop
- **Apr 19th** : Last day for to withdraw
- If you have a disability, please reach out. Make sure to notify me and request appropriate accommodations. Accessibility Services will also help you.
- Cheating and plagiarism are detrimental to your academic success. Review the section on Academic Dishonesty in the University Catalog. I know you do not want to receive an "F" and be dismissed from the course. You also do not want to go through the university disciplinary process.
- You **should** attend class and **actively participate** in discussions to get all the benefits from this course.
- **Late assignments are accepted; however, 24h from the due date, your maximum score can only be 90%.**
- **Make-up exams**: I will administer a make-up exam under limited circumstances, including medical, legal, or funerary (immediate family only). Please, request a make-up exam within 48 hours of the missed exam.
- **Group work**: This skill is important to develop for success in various career paths. Your contribution to the group project will be internally assessed and the oral presentation will be peer-evaluated.
- I aim to provide an inclusive and positive classroom environment conducive to everyone's learning. Please, be professional and courteous at all time. **My motto is to treat others as they would like to be treated.**
- **Importantly, remember to have fun learning!**

WHAT KNOWLEDGE AND SKILLS WILL YOU ACQUIRE?

Upon successful completion of the course, you will be able to:

- ✓ describe the structure and organization of bacterial genomes
- ✓ identify the principles of DNA replication, transcription, and translation
- ✓ compare and contrast regulatory networks and circuits
- ✓ recognize mechanisms underlying physiological adaptations in bacteria in response to environmental adversities
- ✓ understand mechanisms of cellular differentiation in bacteria
- ✓ discuss prokaryotic adaptive immunity to bacteriophages and its current applications
- ✓ describe mechanisms of regulatory RNAs in control of gene expression
- ✓ understand the impact of horizontal gene transfer and the rise in antibiotic resistance
- ✓ apply previous scientific knowledge to new topics
- ✓ work collaboratively with peers
- ✓ read and understand scientific review articles
- ✓ critically evaluate and present primary research articles

COURSE INFORMATION

PREREQUISITES: BIOL 330

REQUIRED MATERIALS: Course readings are selected from scientific review articles, advanced texts, and primary research articles. All materials will be made accessible via Blackboard.

COURSE FORMAT: You will attend lectures with multiple active learning-based activities and small group discussions. You will be evaluated on four quizzes, two writing assignments, four exams, a group oral presentation, and your active participation during discussions. You will have an opportunity to take a fifth exam that will be ***optional*** and ***cumulative*** during finals week. You can also earn extra credit points when you attend the biology seminar series during university hour and write a one-page summary of the talk.

"Life need not be easy, provided only that it is not empty."
Lise Meitner, physicist

GRADING

Exams (4)…….....40%
Writing assignments (2)……..20%
Oral presentation (1)…….....20%
Quizzes (4)…….....15%
Participation …….....5%

Letter Grade Equivalency:
100-93=**A**; 89-90=**A-**; 84-88=**B+**; 80-83=**B**; 76-79=**B-**;
73-75=**C+**; 70-72=**C**; 67-69=**C-**; 64-66=**D+**; 60-63=**D**; <60=**F**.

"The only limit to the height of your achievements is the reach of your dreams and your willingness to work hard for them." Michelle Obama, Former First Lady of the United States