MICR302 (Molecular Microbiology)
CRN 22202
Wint er/Spring 2023
Class time/ location: Mon, Thurs, 11:30 –

Learning objectives

- In this course, you will gain the tools to recognize relationships between DNA, RNA and protein. Applying these tools, you will be able to evaluate the specific contributions of different molecular mechanisms microbes utilize to respond to environmental changes.
- You will have the ability to compare microbial communication and signalling strategies.
- You will understand the importance of the microbiome in maintaining human health.
- You will be able to discuss the pertinent features of budding yeast lifecycle and identify biological processes conserved between yeast and man.
- You will be able to explain why some basic medical research is conducted in yeast.
- You will understand how systems and synthetic biology (por)0.7 dt.u,umonmicYlconmiuss•s.1 (ec)-1

Grading

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6	Bacterial Signalling	
	a) environmental and community	two component systems, quorum sensing and bacterial communication, importance of biofilms
	Dr. Nelson (Feb 27-April 6)	
7	Lifecycle of budding yeast	
		-mating types and mating type switching and signal transduction pathways -stress response and differentiation -comparison of budding yeast to pathogenic fungi
8	Yeast molecular genetic methods	
		- using yeast as a model eukaryote to delineate fundamental biological processes - classical genetic screens, plasmids, mutagenesis and epistasis analysis
9	Systems Biology – Genetics, proteomics , chemical -genetics and other high -throughput approaches	
		-genetic and genomic techniques to decipher gene function -synthetic genetic array technology, and systematic proteomics approaches -drug screening in yeast
10	Synthetic Biology	
		-How to build a designer genome: the convergence of technology, biology and engineering and the design of new genomes and their utility in science and industry

DEPARTMENT INFORMATION AND POLICIES

1. The Department of Biochemistry and Microbiology upholds and enforces the University's policies on academic integrity. These policies are described in the current University Calendar. All students are advised to read this section.

2.

Resource Centre for Students with a Disability

Students with diverse learning styles and needs are welcome in this course. In particular, if you have a disability/health consideration that may require accommodations, approach the Resource Centre for Students with a Disability (RCSD) as soon as possible (http://rcsd.uvic.ca/.) in order to assess your specific needs

Course Experience Survey (CES)

I value your feedback on this course. Towards the end of term, as in all other courses at UVic, you will have the opportunity to complete an anonymous survey regarding your learning experience (CES). The survey is vital to providing feedback to me regarding the course and my teaching, as well as to help the department improve the overall program for students in the future. The survey is accessed via MyPage and can be done on your laptop, tablet, or mobile device. I will remind you and provide you with more detailed information nearer the time but please be thinking about this important activity during the course.