BIOLOGY 401A CRN10396 COURSE OUTLINE FALL 2018

1) MEET THE INSTRUCTORS

- Dr. Francis Choy (course coordinator): Professor in the Department of Biology and a member of the Centre for Biomedical Research (CBR).

  Office: Cun 062a
  Phone: 250- 721-7107
  E-mail: fchoy@uvic.ca

- Office hours: Friday at 3.30 p.m. – 5:00 p.m. Or by appointment. Or simply drop by.

- Expertise is in molecular genetics and enzymology, focusing on the metabolic and molecular bases, and treatments and prevention, of lysosomal storage diseases, specifically Gaucher disease and Sanfilippo syndrome (which result from an inherited deficiency of glucocerebrosidase and N-acetyl glucosaminidase, respectively).

- Dr. Barbara Ehlting: Assistant teaching professor in the Department of Biology

  Office Petch 005
  Email: behlting@uvic.ca
  Phone: 250 472 4066
  Office hours: Tuesdays at 10.30 am – noon. Or by appointment. Or simply drop by.
  I am happy to help you with lecture related questions as much as I can. Please do not hesitate to contact me.

- Expertise in molecular biology, cell biology, biotechnology, genetics, genomics,...

- Office hours are for you to connect with us, review exams, discuss lecture material and get to know each other. It is easier for us to a write reference letter for you if we know you!

2) WHAT IS THIS COURSE ABOUT?

This course is designed to give you an understanding of the application of genetic and molecular biological principles to research and industry; it is about the "Tools and Rules" of Biotechnology: dive into the why and how and explore many variations of standard techniques like cloning, PCR, protein expression systems, use of DNA enzymes and sequencing.
We are in contact with local biotechnology companies and we try to organize field trips and/or invite CEOs to our class room for a guest lecture.

3) WHERE AND WHEN

- Monday and Thursday, 10:00 am to 11:20 am, ELL Room 062

4) STRUCTURE AND ORGANIZATION OF THE COURSE

The course will be given by Drs. Barbara Ehlting and Francis Choy

- There is no designated textbook for this course, but all lectures notes can be downloaded from the Biol 401A CourseSpaces site. Please note, that lecture notes are for personal use only and must not be distributed outside class. References to scientific papers can be found in the lectures notes and it is your responsibility to find the papers online. If students wish they can take recordings of the lecture, which may be for PERSONAL USE ONLY.

5) THE GRADING SYSTEM

1st mid-term exam	25%
2nd mid-term exam	30%
Final Exam	45%
	100%

Optional assignment 5% (accordingly 1st midterm 24%, 2nd midterm 29%, final 42%)

Find a very recent peer reviewed primary research paper (published 2017 or 2018) and write a one – two page summary (including abstract, methods, results and discussion). It is up to you if you want to do this assignment. If you decide to hand in your paper summary you can do so over the entire term, but no later than Friday, November 16th 2018.

5.1) Mid-Term Exams

- The two mid-term exams will be held on

  October 4 - From lectures presented from September 6th - October 1st
  November 8 – From lectures presented on Oct 11th - Nov 5th (midterm2 focuses on material taught after midterm1, but overarching questions are possible!)

- You are responsible for all lecture materials.
- You must write at least ONE midterm. If you miss both midterms due to a valid reason there will be one deferred midterm exam.
- If you miss an exam please contact the course coordinator Dr. Francis Choy immediately.

5.2) The Final Exam

- The final exam will be cumulative and cover all topics presented in the course, with emphasis from the third section after the 2nd mid-term. The date will be schedule by UVic.

5.3) The Grading System

- Final Grades will be assigned on the basis of the following scale:

A+	A	A-	B+	B	B-	C+	C	D	F
90-100%	85-89.9%	80-84.9%	77-79.9%	73-76.9%	70-72.9%	65-69.9%	60-64.9%	50-59.9%	0-49.9%

An "E" grade will not be assigned and Supplemental Exams will not be allowed.

5.4) How to be successful

In order to be successful we strongly recommend that you TURN OFF all online sources (social media/cell phone/facebook/twitter/Youtube/email/text messaging…) during class time AND while you study at home.

Digital communication is distracting and you are not able to concentrate on lecture material. There are many studies showing that grades are negatively affected by focusing on off task material.

Exam times can be very stressful for you. In order to stay healthy physically and mentally make sure that you get enough sleep, eat well, exercise and take breaks. Avoid last minute study panic by working regularly throughout the term: we recommend that you spend at least 2-3 hours studying after each lecture!

6.) TENTATIVE LECTURE SCHEDULE FALL 2018

Thursday	September 6th	Introduction, Details of cloning I	Dr. Ehlting
Monday	September 10th	Details of cloning II	Dr. Ehlting
Thursday	September 13th	Details of cloning III	Dr. Ehlting
Monday	September 17th	Sequencing and bioinformatics I	Dr. Ehlting
Thursday	September 20th	Sequencing and bioinformatics II	Dr. Ehlting
Monday	September 24th	Sequencing and bioinformatics III	Dr. Ehlting
Thursday	September 27th	Next generation sequencing I	Dr. Ehlting
Monday	October 1st	Next generation sequencing II	Dr. Ehlting
Thursday	October 4th	**Midterm 1**	Dr. Ehlting
Monday	October 8th	**Thanksgiving NO CLASS**	
Thursday	October 11th	Biotechnology on industrial level I	Dr. Ehlting
Monday	October 15th	Biotechnology on industrial level II	Dr. Ehlting
Thursday	October 18th	Review/ catch up	Dr. Ehlting
Monday	October 22nd	Details of cloning, Protein expression systems I	Dr. Choy
Thursday	October 25th	Protein expression systems II	Dr. Choy
Monday	October 29th	DNA enzymes I	Dr. Choy
Thursday	November 1st	DNA enzymes II	Dr. Choy
Monday	November 5th	Biotechniques I	Dr. Choy
Thursday	November 8th	**Midterm 2**	Dr. Choy
Monday	November 12th	**Reading break NO CLASS**	
Thursday	November 15th	Biotechniques II	Dr. Choy
Monday	November 19th	Transgenic Animal Model	Dr. Choy
Thursday	November 22nd	CRISP-Cas9 technology	Dr. Choy's lab: guest lecture
Monday	November 26th	Transgenic animal model	Dr. Choy
Thursday	November 29th	Antibody engineering	Dr. Choy
Monday	December 3rd	Stem cell technology	Dr. Choy

We are looking forward to an exciting term with you and we hope that you have a great fall term!