PCB 4514 **Genetics II Syllabus** **Fall Semester 2014**

1. Course Objective: To expand on the basic concepts of Genetics developed in Genetics (PCB 3063). This is an upper division class designed for students who have completed Genetics with a grade of B or better. One semester of Molecular Cell Biology and/or Molecular Biology is desirable. Critical thinking skills will be emphasized.

Lectures will focus on the organization of the human genome, epigenetic, transcriptional, and post-transcriptional regulation of gene expression, chromosome mutation, developmental genetics, and the role of environment in gene expression and phenotypic plasticity. The role of epigenetic processes in gene expression, development, and disease will be a unifying theme.

2. Instructor: Dr. Laurence von Kalm

3. Office: BL 433

4. Phone: (407) 823-6684

5. Email: lvonkalm@ucf.edu

I receive a lot of emails. To ensure a quick response put **Genetics II** in the subject.

I always respond to email from students but some email messages never arrive (or I lose them). If I do not respond to your email within 24 hours you should phone me or talk to me after class. Communications from me to the class will be posted on Webcourses. You are responsible for checking Webcourses on a regular basis.

6. Office Hours: Tuesday, Thursday: 1-3pm or by appointment.

7. Text:

There is no suitable text for an advanced Genetics course. Assigned reading will come from handouts including articles from the primary literature. All material will be posted on Webcourses. A problem set will be assigned for the module on Chromosome Mutations.

8. Grading Scale and Assessment:

Grade Scale:	**Grade Range**	**Grade**	**GPA**
	90 - 100	A	4.0
	87 - 89	A-	3.75
	84 - 86	B+	3.25
	80 - 83	B	3.0
	77 - 79	B-	2.75
	74 - 76	C+	2.25
	70 - 73	C	2.0
	67 - 69	C-	1.75
	64 - 66	D+	1.25
	60 - 63	D	1.0
	Below 60	F	0

Note that the University considers any GPA above zero a passing grade. Specific Program requirements may vary.

i.) Tests (75% of grade) - Note: All tests will be in written answer format.

There will be three tests each worth 25% of the final grade. All test questions will be based on material discussed in class and assigned problem sets. Test dates are as follows:

Test 1:	Tuesday September 16th	in class
Test 2:	Tuesday October 14th	in class
Test 3:	Tuesday November 25th	in class
Test 4:	Thursday December 4th	10am - 12:50pm; in classroom

Note: For those who complete tests 1-3, test 4 is an optional comprehensive final that can be used to replace the lowest grade in tests 1-3. Anyone who misses a test must take test 4 to replace the missing test (see below).

Test scores and grades from critical thinking exercises (see below) will be posted on Webcourses. **I strongly encourage all students to review their tests with me.**

Missed test:

Tests 1-3: If you miss one test for any reason you must take test 4 to make up the missing grade. No documentation is required. If you miss a second or third test you must provide acceptable documented evidence that your reason for missing the test was beyond your control. A make up test(s) will be scheduled during finals week. If acceptable documented evidence is not provided, a grade of 0 will be assigned for the missed test(s). If the missed test was due to official University business at which your presence was required (documentation must be provided), a makeup test will be scheduled as soon as possible at a time convenient for the student and the instructor.

Test 4: For students who have completed tests 1-3 test 4 is an optional comprehensive final that can be used to replace the lowest grade in tests 1-3. If test 4 is the lowest grade it will not be used in calculating the final grade.

Late for the test: If you arrive late for a test you will be allowed to take the test. However, you must turn in the test paper at the regular scheduled end of the test. You will not be allowed extra time unless a documentable emergency has occurred.

Honor system for distribution of tests and answer keys: To facilitate learning, tests 1 and 2 will be returned to the student. In addition, answer keys for these tests will be posted on the web site. Tests 3 and 4 can be reviewed with me by appointment. By enrolling in this class each student agrees that the tests and test answer keys are the intellectual property of the instructor, Laurence von Kalm, and may not be sold or disseminated to any third party. Students further agree to limit all discussion of tests to students enrolled in Genetics II in the fall 2014 semester.

ii.) Critical Thinking Exercises (25% of grade)

Fifteen take home critical thinking exercises will be offered throughout the semester. Each exercise is worth 2% of the final grade. A maximum of 25% of the final grade may be accrued from these exercises. Specific guidelines and submission dates will be provided for each exercise. The guidelines will be discussed in class. If you fail to submit an exercise by the submission deadline you will not receive credit for that exercise.

For these exercises you may work individually or in groups up to six. I trust you not to seek any form of assistance from individuals not enrolled in the class. Groups should submit one response with all group members clearly identified.

Rounding up: If your final average across all tests and critical thinking exercises is less than or equal to one point below a higher grade, rounding up to the higher grade will occur if two of the three tests **and** critical thinking exercises scored at the higher grade. For example, if your final point total for tests and critical thinking exercises is 89.25 and two of the tests and the critical thinking exercises scored at 90 or above your grade will be rounded up to an A. <u>There will be no exceptions to this policy.</u>

9. Academic Dishonesty:

Any form of cheating or academic dishonesty = automatic F and referral to The Office of Student Conduct for disciplinary action. Disciplinary action may include a "Z Designation" placed on the student's official transcript indicating academic dishonesty, where the letter Z will precede the final grade for this course. For more information about the Z Designation, see http://z.ucf.edu/

All electronic devices must be inaccessible during tests. Use or display of any unauthorized electronic device will result in an F for the course and referral to the office of student conduct.

10. Behavior in class:

It is assumed that all students will act in a mature manner in the classroom showing consideration for their peers and the instructor. Any student who consistently distracts other students or the instructor will be removed from the course. **Cell phones must be on silent mode and laptop computers and tablets should only be used to access lecture material or take notes.**

Important Academic Dates:

August 18	Classes Begin
August 21	Drop Ends
August 22	Add Ends
August 29	Payment Deadline
October 6-17	Academic Advising
October 27	Grade Forgiveness and Withdrawal Deadline
December 1	Classes End
December 3-9	Final Examination Period
December 12-13	Commencement

Holidays:

September 1	Labor Day
November 11	Veterans Day
November 27-29	Thanksgiving

ORDER OF MATERIAL TO BE COVERED
(Dates are approximate and actual order may vary)

Aug 19	Introduction and Syllabus	
Aug 21	Module 1:	Review of Prokaryotic and Eukaryotic Gene Organization and Structure
Aug 26	Module 2:	Organization of the Human Genome
Aug 28		Organization of the Human Genome
Sept 2		Organization of the Human Genome
Sept 4	Module 3:	Epigenetics and the Histone Code
Sept 9		Epigenetics and the Histone Code
Sept 11		Epigenetics and the Histone Code
Sept 16	**Test 1: modules 1-3**	
Sept 18	Module 4:	Epigenetic Regulation of X-Chromosome Inactivation
Sept 23		Epigenetic Regulation of X-Chromosome Inactivation
Sept 25		Epigenetic Regulation of X-Chromosome Inactivation
Sept 30	Module 5:	Regulation of Gene Expression in Eukaryotes
Oct 2		Regulation of Gene Expression in Eukaryotes
Oct 7		Regulation of Gene Expression in Eukaryotes
Oct 9		Regulation of Gene Expression in Eukaryotes
Oct 14	**Test 2: modules 4 and 5**	
Oct 16	Module 6:	Chromosome Mutations - do problem set 1 with this module
Oct 21		Chromosome Mutations
Oct 23		Chromosome Mutations
Oct 28	Module 7:	Developmental Genetics
Oct 30		Developmental Genetics
Nov 4		Developmental Genetics
Nov 6		Developmental Genetics
Nov 13	Module 8:	Genes and the Environment
Nov 18		Genes and the Environment
Nov 20		Genes and the Environment
Nov 25	**Test 3: modules 6-8**	
Dec 4	**Test 4: Comprehensive Final**	
	(Optional for students who meet specified requirements - see page 3.)	