

**1. Course objectives and content:** This course will introduce students to the rapidly growing field of epigenetics. Genetics II is an upper division class designed for students who have completed Genetics (PCB 3063) or Molecular Biology I (PCB 3522) with a grade of B or better. Critical thinking skills will be emphasized.

Course material will focus on the organization of the human genome, the concept of the epigenome, epigenetic control of gene and chromosomal regulation, the role of the epigenetics in development and disease and the link between epigenetics and the environment in gene expression and phenotypic plasticity. The role of epigenetic processes in gene expression and disease will be a underlying unifying theme.

**2. Meeting times and course modality:** Tuesday and Thursday: ENG1 227 11:30am-12:50pm. This is a face-to-face course.

**3. Instructor:**

Dr. Laurence von Kalm

Office: BL 433

Phone: (407) 823-6684

Email: [lvonkalm@ucf.edu](mailto:lvonkalm@ucf.edu)

Office hours: In person: Tuesday 1-3pm and Thursday 1-3pm. You can make a zoom appointment to talk anytime we are both available.

**4. Communication with the class:**

All announcements will be made on Webcourses. During the semester it may become necessary to change the syllabus, including, but not limited to test dates, assignment due dates and assessment. If a change to the syllabus is made, an announcement will be made on the Webcourse page and in class. All students are required to check for Webcourse announcements and will be responsible for being aware of changes.

If you email me and I don't respond within 24 hours call me or talk to me in class. Response time will be slower on weekends.

**5. Text:**

I have not been able to find a suitable text for this course, so I have created my own reading for each topic. All material will be posted on Webcourses.

**6. Behavior in class:**

Cell phones must be on silent mode and laptop computers and tablets should only be used to access lecture material and/or to take notes. Audio/video recording of lectures is allowed.

## 7. 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
	60 - 69	D	1.0
	Below 60	F	0

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

### Grading will be divided into three components.

- i. Tests - 60% of grade
- ii. Take Home Critical Thinking Exercises - 25% of grade
- iii. Take Home Hypothesis Development and Experimental Design Exercises - 15% of grade

All grades will be posted on Webcourses. *I strongly encourage all students to review their grades with me.*

A 1% extra credit assignment will be offered on Webcourses during the first week of the semester. The assignment requires you to answer questions about the syllabus and will be due by 5pm Friday January 13. You will not receive credit if your answers indicate that you didn't take the assignment seriously.

### **i. Tests (60% of grade)** - *Note: All test questions will be in short answer format.*

During the semester there will be three required tests (tests 1-3) each worth 20% of the final grade (see page 4 for test dates). All test questions will be based on material discussed in class.

There will also be an **optional** comprehensive final during finals week. If you opt to take the comprehensive final and your grade on this test is higher than your average for tests 1-3, the grade from the comprehensive final will replace your average grade for tests 1-3. *Your grade will not be lowered if you take the optional comprehensive final and score lower than the average of tests 1-3.* You cannot use the optional comprehensive final to replace one test score.

**Missed test:** If you are unable to take a test due to illness, injury, or other reasons such as official University business at which your presence was required, a makeup test will be scheduled as soon as possible at a time convenient for you and me. Documentation showing that events beyond your control were responsible for missing the test must be provided. *I will not accept medical notes that say you were seen by a doctor without an explanation that an illness or injury was involved.* All notes must be on letterhead with a phone number. In the absence of acceptable documentation, a grade of 0 will be assigned. You must notify me in advance if you will miss a test for a religious observance. For more information, see the UCF policy at <http://regulations.ucf.edu/chapter5/documents/5.020ReligiousObservancesFINALJan19.pdf>.

**Rounding up policy:** If your final average across all grading components is less than or equal to one point below a higher grade, rounding up to the higher grade will occur if you meet *both* of the following requirements:

- i. two of the three required tests (tests 1-3) or your grade on the optional comprehensive final must be greater than or equal to the higher grade
- ii. the final grade for critical thinking exercises must be greater than or equal to the higher grade

For example, if your final grade is 89.2 and two required tests and the critical thinking exercises were scored at 90 or above, your grade will be rounded up from an A- to an A. *There will be no exceptions to this policy.*

**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.

### **ii. Take Home Critical Thinking Exercises (25% of grade)**

Ten critical thinking exercises will be offered throughout the semester, and you will have one week to submit a response. Each exercise is worth 2.5% of the final grade. I will critique your first submission and give you an opportunity to revise your answer before the grade becomes final. You will have one week from the date of my critique to submit a revised submission. If you fail to submit a revision within one week the initial grade will stand. *If you fail to submit a response by the first submission deadline you will not receive credit for the exercise and you will be ineligible to submit a revised submission.*

Specific guidelines for the critical thinking exercises will be discussed in class and posted on Webcourses. You may discuss the exercises with other students enrolled in the class, however you may not seek advice or any form of assistance from individuals not registered in the class. Regardless of whether you worked with other students or not, each student must submit a unique response to Webcourses by the submission deadline.

### **iii. Take Home Hypothesis Development and Experimental Design Exercises (15% of grade)**

Three hypothesis development and experimental design exercises will be offered throughout the semester, and you will have one week to submit a response. Each exercise is worth 5% of the final grade. I will critique your first submission and give you an opportunity to revise your answer. I will then critique your revised submission and give you further opportunity to revise before the grade becomes final. You will have one week from the date of each critique to submit a revised submission. If you fail to submit a revision within one week of a critique the previous grade will stand. *If you fail to submit a response by the first submission deadline you will not receive credit for the exercise and you will be ineligible to submit revised submissions.*

Specific guidelines for these exercises will be discussed in class and posted on Webcourses. You may discuss the exercises with other students enrolled in the class, however you may not seek advice or any form of assistance from individuals not registered in the class. Regardless of whether you worked with other students or not each student must submit a unique response to Webcourses by the submission deadline.

**ORDER OF MATERIAL TO BE COVERED (see Webcourses for assigned reading)**

- 1/10 Syllabus and Introduction  
1/12 Module 1: Review of Bacterial and Eukaryotic Gene Organization and Structure  
1/17 Critical Thinking Exercises  
Hypothesis Development and Experimental Design Exercises  
1/19 Module 2: Organization of the Human Genome  
1/24 Organization of the Human Genome continued  
1/26 Organization of the Human Genome continued  
1/31 Organization of the Human Genome continued  
2/2 Organization of the Human Genome continued  
2/7 Organization of the Human Genome continued  
2/9 Module 3: Epigenetics and the Epigenome
- 2/14 **Test 1**  
Module 1: Review of Bacterial and Eukaryotic Gene Organization and Structure  
Module 2: Organization of the Human Genome
- 2/16 Epigenetics and the Epigenome continued  
2/21 Epigenetics and the Epigenome continued  
2/23 Epigenetics and the Epigenome continued  
2/28 Paper discussion 1:  
Systematic Protein Localization Mapping Reveals Five Principal Chromatin Types in Drosophila Cells.  
3/2 Paper discussion 1 continued  
3/7 Module 4: Epigenetic Regulation of X-Chromosome Inactivation  
3/9 Epigenetic Regulation of X-Chromosome Inactivation continued  
3/14 Spring Break - no class  
3/16 Spring Break - no class  
3/21 Epigenetic Regulation of X-Chromosome Inactivation continued  
3/23 Module 5: Chromosome Mutations and Epigenetic Control of Gene Expression
- 3/28 **Test 2**  
Module 1: Review of Bacterial and Eukaryotic Gene Organization and Structure  
Module 3: Epigenetics and the Epigenome  
Paper discussion 1  
Module 4: Epigenetic Regulation of X-Chromosome Inactivation
- 3/30 Chromosome Mutations and Epigenetic Control of Gene Expression continued  
4/4 Chromosome Mutations and Epigenetic Control of Gene Expression continued  
4/6 Module 6: Epigenetics, Genes, and the Environment  
4/11 Paper discussion 2: Epigenetic programming by maternal behavior  
4/13 Paper discussion 2 continued  
4/18 No class
- 4/20 **Test 3**  
Module 1: Review of Bacterial and Eukaryotic Gene Organization and Structure  
Module 5: Chromosome Mutations and Epigenetic Control of Gene Expression  
Module 6: Epigenetics, Genes, and the Environment  
Paper Discussion 2
- 4/27 **Optional Comprehensive Final** (10am – 12:50pm in classroom)  
Modules 1-6  
Paper Discussions 1 and 2

## Important Academic Dates:

January 9	Classes Begin
January 13	Drop/Swap/Add Deadline
January 20	Payment Deadline
March 24	Withdrawal Deadline
April 24	Grade Forgiveness Deadline and Last Day of Classes
April 26-May 2	Final Examination Period
May 4-May 6	Commencement
May 7	Grades Available (may be posted earlier if available)

## Holidays:

January 16	Martin Luther King Day
March 13-17	Spring Break

## Academic Integrity:

**Academic dishonesty in any form will not be tolerated. At the discretion of the instructor, penalties will range from loss of credit for the test or assignment to an F for the entire course.**

Students should familiarize themselves with UCF's Rules of Conduct at

<https://regulations.ucf.edu/chapter5/documents/5.008RulesofConductFINALSept21.pdf>

According to Section 1, "Academic Misconduct," students are prohibited from engaging in

- (a) Unauthorized assistance: Using or attempting to use unauthorized materials, information or study aids in any academic exercise unless specifically authorized by the instructor of record. The unauthorized possession of examination or course related material also constitutes cheating.
- (b) Communication to another through written, visual, electronic, or oral means. The presentation of material which has not been studied or learned, but rather was obtained through someone else's efforts and used as part of an examination, course assignment or project.
- (c) **Commercial Use of Academic Material: Selling of course material to another person and/or uploading course material to a third-party vendor without authorization or without the express written permission of the University and the Instructor. Course materials include but are not limited to class notes, instructor's power points, tests, quizzes, labs, instruction sheets, homework, study guides, and handouts.**
- (d) Falsifying or misrepresenting the student's own academic work.
- (e) Plagiarism: Whereby another's work is used or appropriated without any indication of the source, thereby attempting to convey the impression that such work is the student's own.
- (f) Multiple Submissions: Submitting the same academic work for credit more than once without the express written permission of the instructor.
- (g) Any student who knowingly helps another violate academic behavior standards is also in violation of the standards.
- (h) Soliciting assistance with academic coursework and/or degree requirements. The solicitation of assistance with an assignment, lab, quiz, test, paper, etc., without authorization of the instructor of record or designee is prohibited. This includes but is not limited to asking for answers to a quiz, trading answers, or offering to pay another to complete an assignment. It is considered Academic Misconduct to solicit assistance with academic coursework and/or degree requirements, even if the solicitation did not yield actual assistance (for example, if there was no response to the solicitation).

## **Responses to Academic Dishonesty, Plagiarism, or Cheating**

Students should also familiarize themselves with the procedures for academic misconduct in UCF's student handbook, The Golden Rule (<https://goldenrule.sdes.ucf.edu/>). UCF faculty members have a responsibility for students' education and the value of a UCF degree, and so seek to prevent unethical behavior and when necessary, respond to academic misconduct. Penalties can include a failing grade in an assignment or in the course, suspension, or expulsion from the university, and/or a "Z Designation" on a student's official transcript indicating academic dishonesty, where the final grade for this course will be preceded by the letter Z.

### **Course Accessibility Statement:**

The University of Central Florida is committed to providing access and inclusion for all persons with disabilities. Students with disabilities who need disability-related access in this course should contact the professor as soon as possible. Students should also connect with Student Accessibility Services (SAS) <<http://sas.sdes.ucf.edu/>> (Ferrell Commons 185, sas@ucf.edu, phone 407-823-2371). Through Student Accessibility Services, a Course Accessibility Letter may be created and sent to professors, which informs faculty of potential access and accommodations that might be reasonable. Determining reasonable access and accommodations requires consideration of the course design, course learning objectives and the individual academic and course barriers experienced by the student.

### **Campus Safety Statement:**

Emergencies on campus are rare, but if one should arise during class, everyone needs to work together. Students should be aware of their surroundings and familiar with some basic safety and security concepts.

- In case of an emergency, dial 911 for assistance.
- Every UCF classroom contains an emergency procedure guide posted on a wall near the door. Students should make a note of the guide's physical location and review the online version at <[http://emergency.ucf.edu/emergency\\_guide.html](http://emergency.ucf.edu/emergency_guide.html)>.
- Students should know the evacuation routes from each of their classrooms and have a plan for finding safety in case of an emergency.
- If there is a medical emergency during class, students may need to access a first-aid kit or AED (Automated External Defibrillator). To learn where those are located, see <<https://ehs.ucf.edu/automated-external-defibrillator-aed-locations>>.
- To stay informed about emergency situations, students can sign up to receive UCF text alerts by going to <<https://my.ucf.edu>> and logging in. Click on "Student Self Service" located on the left side of the screen in the toolbar, scroll down to the blue "Personal Information" heading on the Student Center screen, click on "UCF Alert", fill out the information, including e-mail address, cell phone number, and cell phone provider, click "Apply" to save the changes, and then click "OK."
- Students with special needs related to emergency situations should speak with their instructors outside of class.
- To learn about how to manage an active-shooter situation on campus or elsewhere, consider viewing this video (<<https://youtu.be/NIKYajEx4pk>>).

### **Deployed Active-Duty Military Students:**

Students who are deployed active-duty military and/or National Guard personnel and require accommodation should contact their instructors as soon as possible after the semester begins and/or after they receive notification of deployment to make related arrangements.