**PCB 3063L**

A dna strand with bugs on it

Description automatically generated

**Department of Biology, College of Sciences**

**1 credit; Summer 2024**

**\*This syllabus can be modified at any time at the instructor’s discretion. Any changes will be announced on Webcourses.**

\*Course logo designed by Maryam Ghoojaei

**Instructor Information**

* **Instructor:**  Kristyn Gorton
* **Office Location:** BIO 309
* **Office Hours (Virtual):**  Thursdays, 2-3p on [Zoom](https://ucf.zoom.us/j/2957535879) or by appointment.
* **Digital Contact:**  Webcourses@UCF messaging and Webcourses Announcements: **Please allow 24 hours for a response to emails (response times will be longer on weekends)**

**Course Information**

* **Class Meeting Days:**  Thursdays
* **Class Meeting Time:**  3:00p - 5:50p
* **Class Location:** BIO 304
* **Course Modality:**  P (Face to Face) - This class includes a combination of Face-to-Face and online instruction. Lectures and labs will be conducted in-person, while assigned homework, quizzes, and some activities are online. Computers are accessible to students in all of UCF’s computer labs, and most are connected to the internet. For further information, please see [UCF Guides](https://guides.ucf.edu).
* **Course Website:** Access our course website at Webcourses@UCF via the myUCF portal <https://my.ucf.edu/> using your NID and NID password. There you will find all course material including PowerPoints, quizzes, and online homework.
* **Required Materials:**  **All students MUST wear long pants and closed-toe shoes to be admitted into the lab. There are no exceptions!!!**
* **Lab Coordinator:** Dr. Robert Fitak

**Course Description**

Expand your understanding of genetics through hands-on experimentation.  This course is an introduction to a broad range of genetic laboratory techniques.  Participation in multi-week projects will allow students to build upon key genetic concepts in a hands-on manner.  Additional emphasis will be given to development of hypotheses, experimental design/data analysis, and presentation of results.

**Student Learning Outcomes**

Upon completion of this course students will be able to:

* Utilize laboratory tools such as: pipettes, micropipettes, glassware, spectrophotometer, and dissecting microscope
* Demonstrate knowledge of common lab techniques in the study of genetics: PCR, gel electrophoresis, enzyme assays, and DNA extraction.
* Identify mutant phenotypes in model organisms.
* Write a lab report which will include a hypothesis, experimental design, and appropriate statistical analysis of the data to determine if the hypothesis is supported.

**Course Behavior**

It is assumed that all students will act in a mature manner in the classroom, showing consideration for their peers and the instructor. Seriously disruptive behavior will cause the student to be removed from the course and face disciplinary action for student misconduct.

* All electronic devices must be turned off or set to silent mode in the classroom.

**Lab Safety**

* **NO food or drink is allowed in the lab at any time.  Water bottles must stay in backpacks.**
* **\*\*\* OPEN-TOED SHOES CANNOT BE WORN IN THE LABORATORY \*\*\***
* **\*\*\* LONG PANTS MUST BE WORN IN THE LABORATORY \*\*\***
* **You are required to clean your lab spaces before and after each lab, including sanitizing lab safety goggles after each use using ethanol.**

Your instructor will briefly introduce you to the location of lab sinks, eye wash, fire extinguisher, first-aid kits, and safety shower in case of an emergency. Please notify your instructor **immediately** if any safety issues arise. You will be issued appropriate PPE during labs in which it is necessary.

**Assessment and Grading Policies**

|  |  |
| --- | --- |
| **Letter Grade** | **Points** |
| **A** | 90 - 100 |
| **B** | 80 - 89 |
| **C** | 70 - 79 |
| **D** | 60 - 69 |
| **F** | 59 or below |

* Students are responsible for keeping track of their grades and identifying issues within 2 days of any grade posting in Webcourses.
* Letter grades for the semester will be awarded according to the scale above. There will be **no curving** of final grades.
  + The final grade will be rounded up only if it is 0.5 points or less away from the upper letter grade. There will be no exceptions to this policy.
* **Cheating** = automatic F for the entire course and referral to The Office of Student Conduct for disciplinary action. This includes but is not limited to plagiarism.
* Consult the latest Undergraduate [catalog](http://catalog.ucf.edu/) for regulations and procedures regarding grading such as Incomplete grades, grade changes, and grade forgiveness.
* **Turnitin will be enabled in the course for written assignments.**
  + Turnitinis a text-matching software that can be used to help educate students on appropriate referencing techniques. For more details, see Turnitin statement at the end of the syllabus
  + Turnitin generates an "Originality Report" for each submission along with a percent similarity score
  + Turn-it-in similarity scores >35% will be automatically reviewed by the instructor and potentially returned to the student.
  + Only MS Word (doc/docx), HTML, WordPerfect, RTF, PDF, plain text, and PostScript files are accepted.
  + Image files can be uploaded and assessed if they are embedded in the text document
* **Students are responsible for submitting properly formatted, uncorrupted files for all assignments in Webcourses.**
  + If an instructor cannot open or view a submitted file, then a student may submit another file to Webcourses.  However, late penalties will apply.
  + Students are encouraged to download and confirm that a file has been submitted properly. If you are still unsure, then please attach the file in an email to the instructor prior to the deadline via Webcourses email.

**Course Activities and Assignments**

* **Attendance/Participation (15%) –** If you arrive >5 minutes late, you will receive half of the attendance grade for that lab. If you arrive more than 15 minutes late, leave early, or miss a lab without an acceptable, *documentable* excuse, this will count as an unexcused absence. You are permitted **2** unexcused absences.  **A third unexcused absence will result in an automatic F grade**. If you know you are going to miss a lab, see your instructor before the lab and have a documentable reason. All documentation for an excused absence must be made either prior or within 24 hours of the missed lab. **Lab activities missed with an acceptable documentable excuse will still have to be made up at the instructor's discretion and pending availability of materials. Whether unexcused or excused, students are still responsible for submitting homework and quiz assignments.** For medical excuses, your doctor’s note must state that you were seen for a condition, but it does not need to specify the condition.  Please make sure to discuss any absences with your instructor as soon as possible.
* **Activities (20%) –** We suggest you complete these during the class meeting, so you can work together with classmates and ask your TA questions. If you miss a class meeting, even with a documentable excuse, make sure you still complete the associated activities, homework, and quizzes at home. *Please contact your TA regarding how to complete any activities that require lab materials (some lab activities cannot be completed later due to availability of materials and equipment).* These will be due at 11:59 p.m. the night before the next class. Note, if you miss the class meeting you will still lose attendance points even if you complete the activity later.
* **Homework (30%) –** Homework assignments will be assigned after each lab.  **The assignments will be due in Webcourses at 11:59 pm the night before the next class**.  Homework assignments will emphasize critical thinking ability, and will include preparing your lab report along with peer reviews of each other's work. One late homework will be accepted, which must be handed in within one week of the original due date. Additional late homework assignments will result in a zero.
* **Lab Report (20%) -** This **individual** lab report will be based on a fly-cross experiment performed in the laboratory.  Full instructions for this report will be provided on Webcourses. Each section of the lab report will be written separately as homework assignments throughout the semester. Your instructor will provide their feedback on these rough drafts, so you may correct mistakes before turning in the final draft. **Failure to turn in these rough draft homework assignments will result in a considerably lower grade on the final report. Failure to write the lab report in your own words will result in a zero. If you will submit a lab report late, then you must contact your instructor for arrangements. There will be a 50% late penalty for the first 24 hours, and anything later will earn a zero**. **There will be no exceptions.**
* **Lab Practical/Final (15%) -** The lab practical will be based on information from PowerPoints, quizzes, and in-class activities. The exam will consist of both conceptual and hands-on assessments.
  + If you fail to attend an exam for any reason you must provide documented evidence that circumstances beyond your control prevented your attendance. Failure to provide reasonable documentation will result in a grade of 0 for the exam. If the reason for missing the exam is acceptable to the instructor, a makeup exam will be scheduled.
  + **Students cannot keep any part of the exam and all pages must be turned in for grading. Any student turning in an exam that is missing pages or who attempts to steal an exam will receive an automatic F for the entire course and face disciplinary action for student misconduct. Exam scores will be posted on the Grades page of Webcourses. Students are strongly encouraged to review their exams with their instructor.**
* **Extra Credit Online Quizzes (+5%) -** These will be made available on Webcourses after each lab and will be due at 11:59 pm the night before the following lab. These **OPTIONAL** online quizzes will review vital concepts covered in the PowerPoints and provide practice for calculations covered in lab. Do not leave quizzes until the last minute. If you do not submit the quiz before the deadline you will not receive credit. All extra credit will be calculated into your final grade after the final lab practical. Extra credit quizzes will not be reopened once the deadline has passed.

**Honor system for distribution of material**

By registering for this class each student agrees that the quizzes, homework, exam, and other materials are the intellectual property of the coordinator, and may not be sold, reproduced, shared, or used for any purpose that would aid students in future classes. The contents of the materials are to be shared only with individuals registered in this class (PCB 3063L). Any individual who sells, shares, or reproduces for profit or not for profit, intellectual property belonging to the coordinator without his permission will be subject to legal and disciplinary action. The individual also agrees to pay all costs incurred by the instructor related to any legal actions.

**How to do well in the class**

* Come to class on time and participate in activities
* Review lecture and other materials outside of class.
* Complete the online quizzes every week for extra practice!  These quizzes **CANNOT** hurt your grade. Don’t leave this until the last minute. You have a week to complete these assignments, so no late submissions will be allowed.
* Do the assigned homework every week.
* Talk to your instructor as soon as you realize you don’t understand something.

*[Course Schedule on following pages]*

**Course Schedule**

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| --- | --- | --- | --- |
| **Week** | **Date** | **Topic/Activity** | **Assignments** |
| **Week 1** | 5/15 | **Activities:** Intro to Genetics Lab Course; Lab Safety Review  [**Lab 1: Introduction to Science**](/courses/1458959/assignments/8481915)  [**Lab 1 - Activity 2 - Probability Practice**](/courses/1458959/assignments/8481916?wrap=1)  [**Lab 2: Experimental Design**](/courses/1458959/assignments/8481922)  [**Lab 2 - Activity 2 - Analyzing Data**](/courses/1458959/assignments/8481923?wrap=1) | [Financial Aid Quiz](/courses/1458959/assignments/8481901?wrap=1)  [Homework 1: Formulate a hypothesis](/courses/1458959/assignments/8481906?wrap=1)  [Quiz 1 - Introduction to Science](/courses/1458959/assignments/8481938?wrap=1)  [Homework 2: Mendelian inheritance and Chi-Square Practice](/courses/1458959/assignments/8481907?wrap=1)  [Quiz 2 - Experimental Design](/courses/1458959/assignments/8481939?wrap=1) |
| **Week 2** | 5/22 | [**Lab 2 - Activity 3 - Micropipettes**](/courses/1458959/assignments/8481924?wrap=1)  [**Lab 3 - Activity 1 - Fly Handling**](/courses/1458959/assignments/8481925?wrap=1) | [Homework 3: Scientific Paper](/courses/1458959/assignments/8481908?wrap=1)  [Quiz 3 - Fly Handling and Model Organisms](/courses/1458959/assignments/8481940?wrap=1) |
| **Week 3** | 5/29 | [**Lab 4 - Activity 1 - F1 Generation Scoring & Crossing**](/courses/1458959/assignments/8481926?wrap=1)  [**Lab 4 - Activity 2 - Possible Modes of Inheritance (F1)**](/courses/1458959/assignments/8481927?wrap=1)  [**Lab 4 - Activity 3 - DNA Quantification**](/courses/1458959/assignments/8481928?wrap=1) | [Homework 4: Possible Modes of Inheritance (F2)](/courses/1458959/assignments/8481886?wrap=1)  [Quiz 4 - Mendelian Variation and DNA Quantification](/courses/1458959/assignments/8481941?wrap=1) |
| **Week 4** | 6/5 | [**Lab 5 - Activity 1 - DNA Extraction**](/courses/1458959/assignments/8481929?wrap=1)  **Bring safety Goggles and Lab Coats to lab!!!** | [Homework 5: Introduction Draft of Lab Report](/courses/1458959/assignments/8481909?wrap=1)  [Quiz 5: DNA Extraction](/courses/1458959/assignments/8481942?wrap=1) |
| **Week 5** | 6/12 | [**Lab 6 - Activity 1 - F2 Generation Scoring**](/courses/1458959/assignments/8481930)  [**Lab 6 - Activity 2 - F2 Generation Preliminary Analysis**](/courses/1458959/assignments/8481931) | [Homework 6: Methods Draft of Lab Report](/courses/1458959/assignments/8481910?wrap=1) |
| **Week 6** | 6/19 | [**Lab 7 - Activity 1 - F2 Generation Scoring**](/courses/1458959/assignments/8481932)  [**Lab 7 - Activity 2 - F2 Analysis**](/courses/1458959/assignments/8481933) | [Homework 7: Results Draft of Lab Report](/courses/1458959/assignments/8481911?wrap=1) |
| **Week 7** | 6/26 | [**Lab 8 - Activity 1 - Polymerase Chain Reaction (PCR) & Gel Electrophoresis**](/courses/1458959/assignments/8481934?wrap=1) | [Homework 8: Conclusion Draft of Lab Report](/courses/1458959/assignments/8481912?wrap=1)  [Quiz 6 - Polymerase Chain Reaction (PCR)](/courses/1458959/assignments/8481943?wrap=1) |
| **Week 8** | 7/3 | **\*\*\* No Lab: July 4th Break\*\*\*** |  |
| **Week 9** | 7/10 | [**Lab 9 - Activity 2 - PCR**](/courses/1458959/assignments/8481936?wrap=1) | [Quiz 7 - Gel Electrophoresis](/courses/1458959/assignments/8481944?wrap=1) |
| **Week 10** | 7/17 | [**Lab 10 - Activity 2 - Gel Electrophoresis**](/courses/1458959/assignments/8481918?wrap=1)  [**Lab 11 - Activity 1 - PTC (DNA Extract + PCR)**](/courses/1458959/assignments/8481919?wrap=1)  [**Lab 11 - Activity 2 - PTC Expected Results**](/courses/1458959/assignments/8481920?wrap=1) | [Homework 9: Final Exam Review](/courses/1458959/assignments/8481913?wrap=1)  [Lab Report](/courses/1458959/assignments/8481937?wrap=1)  [Homework 10: Molecular Experiment Questionnaire](/courses/1458959/assignments/8481903) |
| **Week 11** | 7/24 | [**Lab 12 - Activity 1 - PTC Gel Electrophoresis**](/courses/1458959/assignments/8481921?wrap=1)  **Review Homework 9 during breaks** |  |
| **Week 12** | 7/31 | **\*\*\*Lab Practical \*\*\*** |  |

**Policy Statements**

**Academic Integrity**

As reflected in the UCF creed, integrity and scholarship are core values that should guide our conduct and decisions as members of the UCF community.  Plagiarism and cheating contradict these values, and so are very serious academic offenses.  Penalties can include a failing grade in an assignment or in the course, or suspension or expulsion from the university.  Students should familiarize themselves with [UCF’s Rules of Conduct](https://scai.sdes.ucf.edu/student-rules-of-conduct/). According to Section 1, "Academic Misconduct," students are prohibited from engaging in:

* *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.
* *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.
* *Commercial Use of Academic Material*: Selling of course material to another person, student, 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 PowerPoints, course syllabi, tests, quizzes, labs, instruction sheets, homework, study guides, handouts, etc.
* *Falsifying or misrepresenting the student’s own academic work*.
* *Plagiarism*: Using or appropriating another’s work without any indication of the source, thereby attempting to convey the impression that such work is the student’s own.
* *Multiple Submissions*: Submitting the same academic work for credit more than once without the express written permission of the instructor.
* *Helping another violate academic behavior standards*.

For more information about Academic Integrity, students may consult [The Center for Academic Integrity](https://academicintegrity.org/).

For more information about plagiarism and misuse of sources, see “[Defining and Avoiding Plagiarism: The WPA Statement on Best Practices](http://wpacouncil.org/node/9)”.

**Turnitin.com**

In this course the instructor will utilize **turnitin.com**, an automated system which can quickly and easily compare each student’s assignment with billions of web sites, as well as an enormous database of student papers that grows with each submission. After the assignment is processed, as an instructor I receive a report from turnitin.com that states if and how another author’s work was used in the assignment. For a more detailed look at this process, visit <http://www.turnitin.com>.

The use of Turnitin is to help educate students regarding their knowledge and understanding of plagiarism. This allows students to develop good academic practices regarding the appropriate use of citations and referencing techniques. Ultimately, using Turnitin will help reduce the risk of submitting plagiarism in assignments.

**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/wp-content/uploads/sites/64/2023/06/2023-2024-Golden-Rule-Student-Handbook.pdf). 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.  For more information about the Z Designation, see <http://goldenrule.sdes.ucf.edu/zgrade>.

**Course Accessibility Statement**

Myself and the University of Central Florida are committed to providing an accessible and welcoming environment to all students, including efforts to make reasonable accommodations for all persons with disabilities. If requested, this syllabus can be made available in alternate formats. Students who require accommodations in this course must contact the instructor at the beginning of the semester to discuss necessary accommodations.  No accommodations will be provided until the student has met with the instructor.  Students who need accommodations are highly encouraged to register with [Student Accessibility Services](http://sas.sdes.ucf.edu/) (Ferrell Commons 185, [sas@ucf.edu,](mailto: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 in our class, everyone needs to work together. Students should be aware of the 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 <https://centralflorida-prod.modolabs.net/student/safety/index>.
* 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 <www.getrave.com/login/ucf> and logging in. On the “My Account” tab, fill out the information, including e-mail address and cell phone number.
* 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.

**Deployed Active Duty Military Students**

If you are a deployed active duty military student and feel that you may need a special accommodation due to that unique status, please contact the instructor to discuss your circumstances.

**Internet Usage**

You will be expected to have daily access to the internet and email, since I will be emailing you constantly about assignment updates, additions and changes.  All students at UCF are required to obtain a [Knight’s Email account](http://www.knightsmail.ucf.edu/) and check it regularly for official university communications.  If you do not own a computer, there are computers accessible to you in all UCF’s computer labs, and most computer labs have computers connected to the internet.  For further information on computer labs, please see the following website: <http://guides.ucf.edu/c.php?g=78577&p=517810>.

**Communication Protocols and/or ”Netiquette”**

* In this class the official mode of communication is through email located inside [Webcourses@UCF](mailto:Webcourses@UCF).  All communication between student and instructor and between student and student should be respectful and professional.  It is the student’s responsibility to check the “coursemail” tool frequently.  You may also wish to create a Knight’s Email account at [knightsemail.ucf.edu](http://www.knightsemail.ucf.edu/) for separate official communication from the university.
* If you would like to send me email, please add the following to the subject line: “<course prefix>: <Student’s last name, first name>“. Since I get a variety of email each day, I do not read all emails I receive.  By having this heading in the subject line, I will read your email immediately.
* Before posting in a forum, always make sure your posting has minimal grammar, punctuation or spelling errors.  You may do this by copying and pasting the text into Microsoft Word, using the “Spelling and Grammar” editor, and pasting it back to the posting area.
* Please avoid shorthand notation or acronyms (such as “TTYL”, “LOL”, or “IMO”) in communications. These notations may not be understood equally among all those receiving the communication.  Emoji’s are OK as long as a corresponding text description is included.

**Religious Observances**

Students must notify their instructor in advance if they intend to miss class for a religious observance. For more information, see the UCF policy at <http://regulations.ucf.edu/chapter5/documents/5.020ReligiousObservancesFINALJan19.pdf>.

**Additional Information, Services, and Resources**

* **Academic Services and Resources:**  A list of available academic support and learning services is available at [UCF Student Services](https://www.ucf.edu/services/). Click on "Academic Support and Learning Services" on the right-hand side to filter.
* **Non-Academic Services and Resources:**  A list of non-academic support and services is also available at [UCF Student Services](https://www.ucf.edu/services/). Click on "Support" on the right-hand side to filter.
* If you are a UCF Online student, please consult the [UCF Online Student Guidelines](https://www.ucf.edu/online/resources/guidelines/) for more information about your access to non-academic services.

**In-Class Recording Statement**

Students may, without prior notice, record video or audio of a class lecture for a class in which the student is enrolled for their own personal educational use. A class lecture is defined as a formal or methodical oral presentation as part of a university course intended to present information or teach students about a particular subject. Recording classroom activities other than class lectures, including but not limited to lab sessions, student presentations (whether individually or part of a group), class discussion (except when incidental to and incorporated within a class lecture), clinical presentations such as patient history, academic exercises involving student participation, test or examination administrations, field trips, and private conversations, and invited guest speakers is prohibited. Recordings may not include the image or voice of other students in the class, may not be used as a substitute for class participation and class attendance, and may not be published or shared without the written consent of the faculty member. Failure to adhere to these requirements may constitute a violation of the University’s Student Code of Conduct as described in the Golden Rule.