Course Syllabus

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Course Title: Molecular Biology I Laboratory Genes and Genetics
Course Number: BI307L
Course credits: 1
Term: Fall 2022
Meeting Days: Monday
Meeting Hours: 2:30 - 5:20pm
Meeting Location: Henry Hall Lab 2

Instructor: Michael Dohm, PhD
Department: Biology, School of Natural Sciences and Mathematics, Chaminade University of Honolulu
Office: Wesselkamper Science Center (WSC) rm. 108
Office Hours: Monday & Friday: 9 - 11am; Thursday: 2 - 4pm, or by appointment
Email: mdohm [at] chaminade.edu (current students: use CANVAS Messaging)
Phone: 808-739-8543
Website: https://letgen.org (https://letgen.org)

Special Attention

Laboratory safety policies as established by the School of Natural Sciences & Mathematics (https://www.chaminade.edu/natural-sciences) and the office of Environmental Health & Safety (http://www.chaminade.edu/department-contact/environmental-safety) at Chaminade University must be obeyed at all times during lab class:

1. No food or drink
2. Students must wear closed toes shoes
3. Students must wear a lab coat when instructed to do so by Faculty or Safety Officer
4. Students are required to know location of SDS and other lab safety equipment. (http://www.letgen.org/chaminade/mod/page/view.php?id=253)

Additional rules of conduct apply in the lab, which will be provided to you on our first meeting. Failure to comply with these rules will result in loss of points or depending on the infraction, you will be asked to leave the classroom. If you do not wear proper attire on Exam days, you will not be permitted to take the exam and will receive a failing grade for that task.

Please respect the rules and do not make this an issue for us all.

Course overview

Genetics Laboratory is a one semester introduction to how geneticists study and interpret patterns of heredity, isolate and manipulate DNA elements, and conduct genetics research by utilizing public data bases and **computer** (https://www.letgen.org/chaminade/mod/glossary/showentry.php?eid=507&displayformat=dictionary) software **programs** (https://www.letgen.org/chaminade/mod/glossary/showentry.php?eid=519&displayformat=dictionary). Through hands-on exercises, discussion, and in-class projects, we will introduce genetic techniques (extraction of genetic material, electrophoresis, hybridization, amplification, data analysis) using model organisms (e.g., bacteria, Brassica, Drosophila, yeast) in order to gain practical experience with the genetic basis of simple phenotypes and an appreciation for how geneticists explore these topics and reflect upon how genetics influences the **environment** (https://www.letgen.org/chaminade/mod/glossary/showentry.php?eid=505&displayformat=dictionary) and human society. Experiments in molecular genetics typically take several hours to complete; thus, data collection and analyses usually require 2 or 3 lab periods to complete.

University Course Catalog Description

Laboratory section accompanying BI 307. Concurrent registration in BI 307 required. Prerequisites: BI 210L, BI 216 and BI 216L (Biology majors). Cross-listed with BC 307L. BI 308 Molecular Biology II Genomics and Epigenomics (3) Components and architecture of genomes. Linkage, physical mapping, and DNA sequencing. Comparing genomes of different species. Role of gene expression and gene networks in differentiation and morphogenesis. Role of DNA methylation and chromatin remodeling in regulation of genes. Role of regulatory RNAs in gene expression.

Course Prerequisites

Concurrent registration BI307

Course details

Required textbook & reading

The course lab manual is included in CANVAS, additional handouts, online sources, and articles given by instructor and made available on the Canvas course website. Your course is at **https://chaminade.instructure.com/courses/20514/**

Your lecture textbook, Concepts of Genetics, by Klug et al. will also be utilized, but it is not required.

Other required material

Students are required to obtain a laboratory coat, now available at the Division of Natural Sciences & Mathematics office (WSC, room 115), for $5. Gloves and safety goggles will be provided to you in the lab room. A personal computer or smart phone is also required material and must be brought to each lab meeting. A three-ring binder for course handouts is recommended, but not required.

Technical Assistance for Canvas Users

The BI307 and BI307L websites are supported by the Canvas course management platform. CANVAS is the CMS adopted by Chaminade University. Assistance with CANVAS

- Search (Google, Bing, etc.) for help on specific topics or get tips in Canvas Students
- Live chat with Canvas Support for students
- Canvas Support Hotline for students: +1-833-209-6111
- Watch this video to get you started
- Online tutorials: click on “Students” role to access tutorials
- Contact the Chaminade IT Helpdesk for technical issues: helpdesk@chaminade.edu or call (808) 735-4855

Course assessment

Your grade will reflect your scores on Worksheets, Exams, Notebook, Reports, and Peer evaluation. In addition to these graded assignments, worksheets and lab questions may be assigned. Each lab is accompanied by questions or a worksheet, which are intended to help you with calculations, problem solving, or troubleshooting protocols -- these are turned in as part of your **lab notebooks (http://www.letgen.org/chaminade/mod/page/view.php?id=852)** and are evaluated as part of your lab notebook record.

Notebooks: Students are expected to keep a detailed and up-to-date electronic lab notebook (Microsoft OneNote) that includes your responses to protocols, results, relevant observations plus analyses. The lab notebook will be used by you to assist you with your reports and exams. We use Microsoft OneNote to manage digital lab notebooks. The digital notebooks are shared with the instructor and may be checked at any time by the instructor during the semester. The notebook is an essential part of working in a laboratory and you will need it to be complete an accurate in order to do well on the exams. We will talk more in class about keeping a good lab notebook.

Lab reports. Each student will complete two lab reports, standard scientific format, during the course of the semester. Each student will submit an electronic document via secured web site. One revision will be permitted before a final grade is assigned for the report. Lab reports will generally follow the following format.

1. A statement of the purpose of that laboratory including a description of the importance of the experiment.
2. An outline of the materials and procedures. This includes relevant details such as dates, times, number of specimens, etc.
3. Tables or figures of results, together with a short written explanation of what is contained in them.
4. Preliminary conclusions
5. Answers to questions, written in your lab manual.

For each report graded elements are draft (30 pts), peer evaluation (10 pts), and final report (20 pts). The final report must include revisions to your manuscript which address the instructor comments. Peer evaluations are conducted on the final papers.

Peer evaluation. As part of each report grade you will evaluate two or three papers from your peers. Details will be provided along with the assignments.

Worksheets & Quizzes. Worksheets or quizzes will be offered about protocols.

Exams. Two exams, one at midterm and the second at the end of the term, will be given. Topic questions from each lab will be provided in handouts, and form the basis of quizzes and exams in the course. These topics will be discussed during lab procedures and are part of your reading assignments.

A note on **working together (http://www.letgen.org/chaminade/mod/page/view.php?id=254)** . Laboratory work is a typically to be viewed as a group homework activity, but lab reports are individual activities. In lab, we conduct experiments and record observations. We will introduce you to how to conduct the analyses required to interpret your experiments. However, you can expect to spend time outside of class completing analysis and writing up results and conclusions from the experiments. Write-ups and analyses are to be turned in by each student and the work must be the work of the student only. However, data belong to the group and so data are shared between two or sometimes the entire class of students. Periodically, we will break into groups to discuss topics or work on problems introduced in lab. The purpose of the group activity is to give you opportunities to be more active learners, but also to be responsible to each other for the material. You will be given material in advance, and you must come to class prepared to discuss the material with your classmates.

Grading

A total of 400 points may be earned throughout the semester; each item has the following value.

Item	How often?	Points per assignment	Weight
Quizzes or Worksheets	10	5	12.5%
Reports	2	60	30%
Draft		30	

Final		20	
Peer evaluation		10	
Lab notebook	Collected twice	80	20%
Midterm		10	
End term		70	
Exams	2	75	37.5%
Course total		400	100%

Final grade: Your grade will be based on the following.

	Letter grade
90 - 100%	A
80 - 89%	B
70 - 79%	C
60 - 69%	D
< 60%	F

Official grade records

Canvas provides a way for you to monitor your graded assignments. This is convenient, but students should be aware that the final word about grades depends on the Official Grade Book for the course. Thus, although the Canvas record will show your points for an assignment, be advised that your assigned grade is finalized by the official grade book, which is maintained by Dr Dohm. You may always inquire about your current standing in the course by sending a **message** to Dr Dohm from within Canvas.

Lab schedule

Click **here to view the schedule of labs and assignment due dates**.

Student (Course) Learning Outcomes

1. Describe and apply the Scientific Method to observable phenomenon including being able to recognize and synthesize proper scientific questions and hypotheses; as well as being able to understand the relationship between the structure and function of genes and proteins.
2. Graph, analyze and interpret scientific data appropriately and correctly.
3. Perform & understand experimental methodology in regards to DNA extraction, PCR, sequencing, bioinformatic computer modeling and mendelian inheritance.

4. Write scientific paper(s) and/or lab report(s).

Alignment of Course Learning Outcomes (CLO) to Biology Program Outcomes (PLO)

CLO	PLO
1	1, 2, 3
2	2, 3
3	1, 2, 3
4	1, 2, 3, 4

Biology Program Learning Outcomes

Upon completion of the B.S. degree program in Biology the student will demonstrate:

1. An understanding of the scientific method and the ability to design and test a hypothesis.
2. The ability to visualize, statistically evaluate, validate and interpret scientific data, and to communicate science effectively both orally and in writing.
3. The ability to acquire and comprehend information from published scientific literature and to employ computational resources in the resolution of biological problems.
4. An understanding of the chemical and physical principles that unite all life forms, and of biological organization at the molecular, cellular, tissue, organ, organism and system levels.
5. The ability to define the components and processes of genetic and epigenetic information transmission, and their determinant effects on the adaptive and evolutionary processes that they drive.
6. An understanding of the entry requirements, career pathways and progression for the major post-graduate fields of research, education and the health professions.

University outcomes

Marianist Values

This class represents one component of your education at Chaminade University of Honolulu. An education in the Marianist Tradition is marked by five principles and you should take every opportunity possible to reflect upon the role of these characteristics in your education and development:

1. Education for formation in faith
2. Provide an integral, quality education
3. Educate in family spirit
4. Educate for service, justice and peace
5. Educate for adaptation and change

Native Hawaiian Values

Education is an integral value in both Marianist and Native Hawaiian culture. Both recognize the transformative effect of a well-rounded, value-centered education on society, particularly in seeking justice for the marginalized, the forgotten, and the oppressed, always with an eye toward God (Ke Akua). This is reflected in the ‘Olelo No’eau (Hawaiian proverbs) and Marianist core beliefs:

1. Educate for Formation in Faith (Mana) E ola au i ke akua (‘Ōlelo No‘eau 364) May I live by God
2. Provide an Integral, Quality Education (Na’auao) Lawe i ka ma‘alea a kū‘ono‘ono (‘Ōlelo No‘eau 1957) Acquire skill and make it deep
3. Educate in Family Spirit (‘Ohana) ‘Ike aku, ‘ike mai, kōkua aku kōkua mai; pela iho la ka nohana ‘ohana (‘Ōlelo No‘eau 1200) Recognize others, be recognized, help others, be helped; such is a family relationship
4. Educate for Service, Justice and Peace (Aloha) Ka lama kū o ka no‘eau (‘Ōlelo No‘eau 1430) Education is the standing torch of wisdom
5. Educate for Adaptation and Change (Aina) ‘A‘ohe pau ka ‘ike i ka hālau ho‘okahi (‘Ōlelo No‘eau 203) All knowledge is not taught in the same school

Alignment of Natural Sciences Courses with Marianist and Hawaiian values of the University.

The Natural Sciences Division provides an integral, quality education: sophisticated integrative course content taught by experienced, dedicated, and well-educated instructors.

- We educate in the family spirit – every classroom is an Ohana and you can expect to be respected yet challenged in an environment that is supportive, inclusively by instructors who take the time to personally get to know and care for you.
- We educate for service, justice and peace, since many of the most pressing global issues (climate change, health inequity, poverty, justice) are those which science and technology investigate, establish ethical parameters for, and offer solutions to.
- We educate for adaptation and change. In science and technology, the only constant is change. Data, techniques, technologies, questions, interpretations and ethical landscapes are constantly evolving, and we teach students to thrive on this dynamic uncertainty.

The study of science and technology can be formative, exploring human creativity and potential in the development of technologies and scientific solutions, the opportunity to engage in the stewardship of the natural world, and the opportunity to promote social justice. We provide opportunities to engage with the problems that face Hawai‘i and the Pacific region through the Natural Sciences curriculum, in particular, those centered around severe challenges in health, poverty, environmental resilience, and erosion of traditional culture. The Marianist Educational Values relate to Native Hawaiian ideas of mana, na’auao, ohana, aloha and aina. We intend for our Natural Sciences programs to be culturally-sustaining, rooted in our Hawaiian place, and centered on core values of Maiau, be neat, prepared, careful in all we do; Makawalu, demonstrate foresight and planning; `Ai, sustain mind and body; Pa`a Na`au, learn deeply.

Course policies

Canvas "grading"

Canvas "grades" are tentative and not official. Canvas scores available to students are not official until the instructor announces such to the class. Official grading is done by the instructor and records are kept on the instructor's computer.

Instructor and Student Communication

Questions for this course can be posted to the instructor via CANVAS. Online, in-person and phone conferences can be arranged. Most messages to Canvas will be replied within 24 hours, often much sooner. Email to instructor's chaminade.edu e-mail may take up to 3 days for response.

Graded materials will be returned within 7 - 10 days.

Accessibility and Accommodations

If you need individual accommodations to meet course outcomes because of a documented disability, please speak with me to discuss your needs as soon as possible so that we can ensure your full participation in class and fair assessment of your work. Students with special needs who meet criteria for the Americans with Disabilities Act (ADA) provisions must provide written documentation of the need for accommodations from the Counseling Center by the end of week three of the class, in order for instructors to plan accordingly. If a student would like to determine if they meet the criteria for accommodations, they should contact the Counseling Center at (808) 735-4845 for further information (counselingcenter@chaminade.edu).

Title IX Compliance

Chaminade University of Honolulu recognizes the inherent dignity of all individuals and promotes respect for all people. Sexual misconduct, physical and/or psychological abuse will NOT be tolerated at CUH. If you have been the victim of sexual misconduct, physical and/or psychological abuse, we encourage you to report this matter promptly. As a faculty member, I am interested in promoting a safe and healthy environment, and should I learn of any sexual misconduct, physical and/or psychological abuse, I must report the matter to the Title IX Coordinator. If you or someone you know has been harassed or assaulted, you can find the appropriate resources by visiting Campus Ministry, the Dean of Students Office, the Counseling Center, or the Office for Compliance and Personnel Services.

Attendance Policy

The following attendance policy is from the **Chaminade University Undergraduate Catalog (https://catalog.chaminade.edu/generalinformation/academicaffairs/policies/attendance)** : Students are expected to attend regularly all courses for which they are registered. Student should notify their instructors when illness or other extenuating circumstances prevents them from attending class and make arrangements to complete missed assignments. Notification may be done by emailing the

instructor's Chaminade email address, calling the instructor's campus extension, or by leaving a message with the instructor's division office. It is the instructor's prerogative to modify deadlines of course requirements accordingly. Any student who stops attending a course without officially withdrawing may receive a failing grade. Unexcused absences equivalent to more than a week of classes may lead to a grade reduction for the course. Any unexcused absence of two consecutive weeks or more may result in being withdrawn from the course by the instructor, although the instructor is not required to withdraw students in that scenario. Repeated absences put students at risk of failing grades. Students with disabilities who have obtained accommodations from the Chaminade University of Honolulu ADA Coordinator may be considered for an exception when the accommodation does not materially alter the attainment of the learning outcomes. Federal regulations require continued attendance for continuing payment of financial aid. When illness or personal reasons necessitate continued absence, the student should communicate first with the instructor to review the options. Anyone who stops attending a course without official withdrawal may receive a failing grade or be withdrawn by the instructor at the instructor's discretion.

Late Work Policy

There are no make-ups for quizzes, unless a physician's note documents your absence during quizzes. Journal article presentations CANNOT be made-up. Quizzes and assignments are due by 8:59am HST on the assigned date. Up to 10% grade reduction will be assessed for each 12 hour late assignment. All quizzes and assignments close by 3 days post the due date.

Grades of "Incomplete"

Students and instructors may negotiate an incomplete grade when there are specific justifying circumstances. An Incomplete Contract (available from the Divisional Secretary and the Portal) must be completed. When submitting a grade, the "I" will be accompanied by the alternative grade that will automatically be assigned after 90 days. These include IB, IC, ID, and IF. If only an "I" is submitted the default grade is F. The completion of the work, evaluation, and reporting of the final grade is due within 90 days after the end of the semester or term. This limit may not be extended.

Writing Policy

Instructions for the writing assignments are detailed for each individual assignment on the canvas course page.

Potential resources for writing assignments:

- Google Scholar
- Pubmed
- Sullivan Library

Cell phones, tablets, and laptops

Instructor policy: Students are encouraged to use personal digital devices during class provided such use does not distract others or interfere with class activities.

University policy: Music Devices and Cellular Phones: *Unless specifically permitted by your instructor* [emphasis by instructor], use of music devices and cell phones is prohibited during all Natural Science and Mathematics classes, as it is discourteous and may lead to suspicion of academic misconduct. Students unable to comply will be asked to leave class. Out of consideration for your classmates, please set your cell phone to silent mode during class. Students are encouraged to bring laptops or tablets to class as the instructor will assign online activities and readings that will require the use of a laptop or tablet. Laptops and tablets should not be misused, such as checking distracting websites. Use your best judgment and respect your classmates and instructor.

Recording of lecture material

Students may not record audio or video of lectures conducted by the instructor nor of any media presented during the lecture without prior permission from the instructor. All materials presented in class by the instructor will be made available to students.

Academic Conduct Policy

The success of the Honor Code is made possible only with the acceptance and cooperation of every student. Each student is expected to maintain the principles of the Code. Example of Honor Code violations include, but are not limited to:

- Giving or receiving information from another student during an examination;
- Using unauthorized sources for answers during an examination;
- Illegally obtained test questions before the test;
- Any and all forms of plagiarism – submit all or part of someone else’s work or ideas as your own;
- The destruction and/or confiscation of school and/or personal property.

Violations of Academic Integrity: Violations of the principle include, but are not limited to:

- Cheating: Intentionally using or attempting to use unauthorized materials, information, notes, study aids, or other devices in an academic exercise.
- Fabrication and Falsification: Intentional and unauthorized alteration or invention of any information or citation in an academic exercise. Falsification is a matter of inventing or counterfeiting information for use in any academic exercise.
- Multiple Submissions: The submission of substantial portions of the same academic work for credit (including oral reports) more than once without authorization.
- Plagiarism: Intentionally or knowingly presenting the work of another as one’s own (i.e., without proper acknowledgment of the source).
- Abuse of Academic Materials: Intentionally or knowingly destroying, stealing, or making inaccessible library or other academic resource materials.
- Complicity in Academic Dishonesty: Intentionally or knowingly helping or attempting to help another to commit an act of academic dishonesty.

Plagiarism includes, but is not limited to:

- Complete or partial copying directly from a published or unpublished source without proper acknowledgement to the author. Minor changes in wording or syntax are not sufficient to avoid charges of plagiarism. Proper acknowledgement of the source of a text is always mandatory.
- Paraphrasing the work of another without proper author acknowledgement.
- Submitting as one's own original work, however freely given or purchased, the original exam, research paper, manuscript, report, computer file, or other assignment that has been prepared by another individual.

Consequences of academic honesty violations:

From the **Chaminade University catalog (https://catalog.chaminade.edu/generalinformation/academicaffairs/policies/academichonesty)** : Academic honesty is an essential aspect of all learning, scholarship, and research. It is one of the values regarded most highly by academic communities throughout the world. Violations of the principle of academic honesty are extremely serious and will not be tolerated. Students are responsible for promoting academic honesty at Chaminade by not participating in any act of dishonesty and by reporting any incidence of academic dishonesty to an instructor or to a University official. Academic dishonesty may include theft of records or examinations, alteration of grades, and plagiarism, in addition to more obvious dishonesty. Questions of academic dishonesty in a particular class are first reviewed by the instructor, who must make a report with recommendations to the Dean of the Academic Division. Punishment for academic dishonesty will be determined by the instructor and the Dean of Academic Division and may include an "F" grade for the work in question, an "F" grade for the course, suspension, or dismissal from the University.

Additional information on student conduct can be found in the student handbook.

Tutoring and Writing Services

Chaminade is proud to offer free, one-on-one tutoring and writing assistance to all students. Tutoring and writing help is available on campus at Kōkua 'Ike: Center for Student Learning in a variety of subjects (including, but are not limited to: biology, chemistry, math, nursing, English, etc.) from trained Peer and Professional Tutors. Please check Kōkua 'Ike's website (https://chaminade.edu/advising/kokua-ike/) for the latest times, list of drop-in hours, and information on scheduling an appointment. Free online tutoring is also available via Smarthinking. Smarthinking can be accessed 24/7 from your Canvas account. Simply click Account – Notifications – Smarthinking. For more information, please contact Kōkua 'Ike at tutoring@chaminade.edu or 808-739-8305.

Online Tutoring through Smarthinking

All CUH students are eligible to use Smarthinking, an online tutoring system. Students can access Smarthinking via their Canvas account. Through Smarthinking, students can connect in real-time with an expert educator in a variety of subjects using a virtual whiteboard technology. Students also have an option to schedule a 30-minute appointment with a tutor of their choice. The Online Writing Lab provides

students with the ability to receive a detailed, personalized critique of any written assignment through a formal critique process. All sessions are archived and available for students to review at any time for studying or test preparation.

/MD

Course Summary:

Date	Details	Due
Fri Aug 26, 2022	First Assignment (https://chaminade.instructure.com/courses/20514/assignments/227124)	due by 11:59pm
	Lab safety contract form (https://chaminade.instructure.com/courses/20514/assignments/227127)	due by 11:59pm
Mon Aug 29, 2022	Submit your digital notebook's URL (https://chaminade.instructure.com/courses/20514/assignments/227136)	due by 5:30pm
Mon Sep 5, 2022	Quiz - Mendel (https://chaminade.instructure.com/courses/20514/assignments/227116)	due by 11:59pm
	Quiz Lab Safety (https://chaminade.instructure.com/courses/20514/assignments/227112)	due by 11:59pm
Mon Sep 12, 2022	Bioinformatics I (https://chaminade.instructure.com/courses/20514/assignments/227117)	due by 11:59pm
	Submit leaf counts (https://chaminade.instructure.com/courses/20514/assignments/227134)	due by 11:59pm
	Submit tomato quantitative measures (https://chaminade.instructure.com/courses/20514/assignments/227135)	due by 11:59pm
Sun Sep 18, 2022	Linkage problems (https://chaminade.instructure.com/courses/20514/assignments/227114)	due by 11:59pm
	Mendel - Pedigree (https://chaminade.instructure.com/courses/20514/assignments/227110)	due by 11:59pm

Date	Details	Due
	More Mendel (https://chaminade.instructure.com/courses/20514/assignments/227115)	due by 11:59pm
Fri Sep 30, 2022	Grade01 Notebook (https://chaminade.instructure.com/courses/20514/assignments/227125)	due by 11:59pm
	LabExam01 (https://chaminade.instructure.com/courses/20514/assignments/227128)	due by 11:59pm
Mon Oct 3, 2022	Nucleic Acid quality and quantity (https://chaminade.instructure.com/courses/20514/assignments/227130)	due by 11:59pm
Wed Oct 5, 2022	Submit Report01 Draft here (https://chaminade.instructure.com/courses/20514/assignments/227132)	due by 12:30pm
Fri Oct 28, 2022	Bioinformatics II: Student Executive Summary (https://chaminade.instructure.com/courses/20514/assignments/227119)	due by 11:59pm
	Bioinformatics II: Student protocol (https://chaminade.instructure.com/courses/20514/assignments/227120)	due by 11:59pm
	Use of ORF Finder: Practice and Worked example (https://chaminade.instructure.com/courses/20514/assignments/227137)	due by 11:59pm
	Use of Virtual Ribosome: Practice and worked example (https://chaminade.instructure.com/courses/20514/assignments/227138)	due by 11:59pm
Sun Oct 30, 2022	Quiz - PCR (https://chaminade.instructure.com/courses/20514/assignments/227113)	due by 11:59pm
Mon Oct 31, 2022	Bioinformatics II - 2 November (https://chaminade.instructure.com/courses/20514/assignments/227118)	due by 11:59pm
Fri Nov 11, 2022	Confirm receipt Report 1 draft comments (https://chaminade.instructure.com/courses/20514/assignments/227121)	due by 11:59pm

Date	Details	Due
Fri Nov 18, 2022	LabExam02 (https://chaminade.instructure.com/courses/20514/assignments/227129)	due by 11:59pm
Tue Nov 22, 2022	Evolution of lactate intolerance (https://chaminade.instructure.com/courses/20514/assignments/227122)	due by 11:59pm
	Evolutionary genetics simulation (https://chaminade.instructure.com/courses/20514/assignments/227123)	due by 11:59pm
	Quiz - Evolutionary and Population genetics (https://chaminade.instructure.com/courses/20514/assignments/227109)	due by 11:59pm
Wed Nov 23, 2022	Project Peer evaluation (https://chaminade.instructure.com/courses/20514/assignments/227131)	due by 8:59am
Fri Dec 2, 2022	Grade02 Notebook (https://chaminade.instructure.com/courses/20514/assignments/227126)	due by 11:59pm
	Submit Report01 final (https://chaminade.instructure.com/courses/20514/assignments/227133)	due by 11:59pm
	Quiz: Introduction (https://chaminade.instructure.com/courses/20514/assignments/227111)	