

Division of Natural Sciences and Geology, Department of Biology
<http://www.hccs.edu/programs/programs-a-z/biology>

BIOL 2416: Genetics | #19491

Spring 2019 | 16 Weeks (1.14.2019-5.12.2019)
 in-Person | WHI 316 - T 11:00AM-1:50PM | WHI 316 – R 11:00AM-1:50PM
 4-hour lecture and lab course | 96 hours per semester

Instructor Contact Information

Instructor: Aukje “Tineke” Berends, Ph.D. **Office Phone:** 713-718-5875 (**Canvas email preferred**)
Office: WHI 307 **Office Hours:** TR 2:00-3:00PM & by apptmt as needed
HCC Email: tineke.berends@hccs.edu **Office Hours Location:** WHI 307

HCC Basic Needs Statement:

Any student who faces challenges securing their food or housing and believes this may affect their performance in the course is urged to contact the Dean of Students for support. Furthermore, please notify the professor if you are comfortable in doing so. Additional information may be found at: <http://www.hccs.edu/applying-and-paying/financial-aid/financial-coach/>

Required Course materials:

Textbook	“Genetics: A Conceptual Approach” by Benjamin A. Pierce, 6 th Ed. (CHEAPER 5 th or international editions are fine too!) Access to Sapling Plus is OPTIONAL: there will be NO Sapling Plus online assignments. The HCC bookstore sells a looseleaf bundle <u>with</u> Sapling access: ISBN 9781319125950.
Access to Eagle Online Canvas	All course materials, online homework, email communication and the gradebook will be housed in Eagle Online Canvas: https://eagleonline.hccs.edu/login/ldap Use your W number and your regular email password to log in (if it is your first time, use “distance” as your default password). You may use a personal device, or you may use any of the freely available computers on any HCC campus.
Mini Essay Book Green Scantrons (Form 886-E)	One for each lecture exam
Small Green Scantron (Form 882-E)	One for the comprehensive final exam
Bound Composition Notebook	To be used as lab notebook

Exams and Assignments:

Lecture Exams	5 lecture exams (typically mostly multiple choice, some fill in the blank, some short answer essay questions; mini essay book green scantron (form 886-E) required)
Comprehensive Final Exam	Multiple choice exam (typically 50 questions; small green scantron (form 882-E) required)
Pre-Lecture Online Assignments	15 online pre-lecture assignments to be submitted in Eagle Online Canvas (completion grade)
Post-Lecture Online Quizzes	15 online post-lecture quizzes to be submitted in Eagle Online Canvas (10 multiple choice questions; up to 3 attempts each; record highest grade only)
Poster Presentation	1 poster presentation of a genetic disorder, genetics researcher, or genetics technique (grading)

	rubric will be shared in Canvas)
Lab Worksheets	To be turned in on paper (generally due 1 week after lab completion; exact details for each lab will be provided in class)
Lab Notebook	To be graded near the end of the semester (must record all labs & follow lab notebook rules)
Lab Practical Exam	1 practical exam (all fill in the blank or short answer; may include skills test)
Other Activities	Individual, whole/small group activities; may include clicker questions, discussions, case studies, field trips etc.; not graded but indispensable for learning the material in time for the exams

Course Policies:

Success Strategy	<ul style="list-style-type: none"> • Come to every class • Take good notes by hand (CAPTURE, don't copy!) • Be respectful and patient • Ask questions • Explain your reasoning • Dare to make mistakes • Learn by teaching others • Develop a daily study/assignment routine and stick to it; beware science courses typically require 6-9 hours of reading, study, and/or homework activity OUTSIDE of class.
Cell Phones and Smart Watches	There is empirical evidence that cell phone use during class hurts student learning, even if a neighbor is using the cell phone. For this reason, cell phone and smart watch use are BANNED during class. If you need to use your cell phone or smart watch, please feel free to quietly step outside, or you may choose to wait until our hourly cell phone breaks. Cell phones and smart watches are never allowed on or near your person during any exams.
Academic Integrity	This instructor is committed to a high standard of academic integrity in the academic community. In becoming a part of the academic community, students are responsible for honesty and independent effort. Failure to uphold these standards includes, but is not limited to, the following: plagiarizing written work or projects, cheating on exams or assignments, collusion on an exam or project, and misrepresentation of credentials or prerequisites when registering for a course. Cheating includes merely looking at or copying from another student's exam, orally communicating or receiving answers during an exam, having another person take an exam or complete a project or assignment, using unauthorized notes, texts, smart watches, or other materials for an exam, and obtaining or distributing an unauthorized copy of an exam or any part of an exam. Plagiarism means passing off as his/her own the ideas or writings of another (that is, without giving proper credit by documenting sources). Plagiarism includes submitting a paper, report, or project that someone else has prepared, in whole or in part. Collusion is inappropriately collaborating on assignments designed to be completed independently. These definitions are not exhaustive. When there is clear evidence of cheating, plagiarism, collusion, or misrepresentation, disciplinary action may include but is not limited to requiring you to retake or resubmit an exam or assignment, assigning a grade of zero or "F" for an exam or assignment; or assigning a grade of "F" for the course. Additional sanctions including being withdrawn from the course, program or expelled from school may be imposed on a students who violate the standards of academic integrity. Beware cell phones and smart watches are NOT allowed on or near your person during exams, nor may you take a bathroom break during an exam. Please remember to keep your eyes on your own test or on the ceiling.
Grade Calculation	<ul style="list-style-type: none"> • 55%: Best 4 out of 5 Lecture Exams • 10%: Best 26 out of 30 Online Pre-lecture Assignments and Post-Lecture Quizzes • 5%: 1 Poster Presentation • 10%: Lab Reports (Worksheets & Notebook) • 10%: 1 Practical Exam • 10%: 1 Comprehensive Final Exam
Grading Scale/Curving	<ul style="list-style-type: none"> • A = 90% and up (4 GPA points/semester hour) • B = 80-89% (3 GPA points/semester hour) • C = 70-79% (2 GPA points/semester hour) • D = 60-69% (1 GPA points/semester hour) • F = 59% and below (0 GPA points/semester hour) • W (Withdrawn) (does not affect GPA; YOU must initiate) • I (Incomplete) (does not affect GPA; must be in good standing late in semester)

	Course % grades ending in 0.50 or more will be rounded up; course % grades ending in 0.49 or less will NOT be rounded up. It is YOUR responsibility to KEEP AN EYE ON YOUR GRADE and do everything you can to AVOID BEING BORDERLINE. NO EXCEPTIONS.
Makeup Work	Because I drop so many grades, there will be NO MAKEUP WORK for lecture exams and online assignments. Lab reports will be due 1 week after lab completion; late lab reports will be penalized. If you have a valid, official 3 rd party excuse on letterhead (not a note from your parent) to explain why you must miss the practical exam or the final exam, you MUST notify me ASAP to make other arrangements.
Extra Credit	Your grade is to be primarily based on your knowledge and skill level. This is why I do NOT assign EXTRA CREDIT work to make up for poor grades. However, to help you out your pre-lecture assignments (part of your online homework) will be based on completion, and you get three attempts on every post-lecture quiz (only the highest grade counts). I also drop the lowest lecture exam score, the lowest lab report score, and the lowest 4 online assignment scores. Sometimes lecture exams may include the opportunity to earn a few bonus points. Beware that NOT TURNING IN ANY ONLINE ASSIGNMENTS ON TIME will COST you UP TO 10 % of your grade (1 whole letter grade). Ditto for not turning in any lab reports.
Course Withdrawal	Students must withdraw by the withdrawal deadline in order to receive a "W" on a transcript. This semester's withdrawal deadline is November 2, 2018. Be certain you understand HCC policies about dropping a course and consult with a counselor/advisor to determine if withdrawing is in your best interest. It is your responsibility to withdraw officially from a class and prevent an "F" or "FX" from appearing on your transcript. Senate Bill 1231 limits the number of W's a student can have to 6 classes over the course of their entire academic career. This policy is effective for students entering higher education for the first time in fall 2007 and subsequent terms. Withdrawals accumulated at any other Texas public higher education institution count toward the 6 course total. Withdrawals for certain circumstances beyond the students control may not be counted toward the 6- drop limit. In addition, withdrawing from a course may impact your financial aid award or eligibility. Contact the Financial Aid Office or website to learn more about the impact of withdrawing on financial aid.

HCC Policies and Services:

Syllabus	It is your responsibility to read the syllabus in its entirety and contact the Instructor if you have any questions and/or need clarifications. The instructor reserves the right to modify the syllabus at any time during the semester and will promptly notify students in writing, typically by e-mail, of any such changes.
HCC Email Policy	To protect YOUR privacy, HCC prefers students to communicate only through the HCCS email system. If you have not activated your HCCS student email account, you can go to HCC Eagle ID and activate it now. You are strongly encouraged to use Canvas Inbox to communicate.
disAbility Services	HCC strives to make all learning experiences as accessible as possible. If you anticipate or experience academic barriers based on your disability (including mental health, chronic or temporary medical conditions), please meet with a campus Abilities Counselor as soon as possible in order to establish reasonable accommodations. Reasonable accommodations are established through an interactive process between you, your instructor(s) and Ability Services. It is the policy and practice of HCC to create inclusive and accessible learning environments consistent with federal and state law. For more information, please go to http://www.hccs.edu/support-services/disability-services/
Title IX	Houston Community College is committed to cultivating an environment free from inappropriate conduct of a sexual or gender-based nature including sex discrimination, sexual assault, sexual harassment, and sexual violence. Sex discrimination includes all forms of sexual and gender-based misconduct and violates an individual's fundamental rights and personal dignity. Title IX prohibits discrimination on the basis of sex-including pregnancy and parental status in educational programs and activities. If you require an accommodation due to pregnancy please contact an Abilities Services Counselor. The Director of EEO/Compliance is designated as the Title IX Coordinator and Section 504 Coordinator. All inquiries concerning HCC policies, compliance with applicable laws, statutes, and regulations (such as Title VI, Title IX, and Section 504), and complaints may be directed to: David Cross, Director EEO/Compliance

	Office of Institutional Equity & Diversity, 3100 Main, (713) 718-8271, Houston, TX 77266-7517 or Institutional.Equity@hccs.edu http://www.hccs.edu/departments/institutionale-quity/title-ix-know-your-rights/
Instructor Responsibilities	As your Instructor, it is my responsibility to: <ul style="list-style-type: none"> • Provide the grading scale and detailed grading formula explaining how student grades are to be derived • Facilitate an effective learning environment through class activities, discussions, and lectures • Provide a description of any special projects or assignments • Inform students of policies such as attendance, withdrawal, tardiness and make up • Provide the course outline and class calendar which will include a description of any special projects or assignments • Arrange to meet with individual students before and after class as required
HCC Student Handbook	All official HCC policies, student services and student responsibilities are clearly stated in the HCC Student Handbook, including academic honesty, support, withdrawal, repeating courses, grade of FX and international students, FERPA and privacy, the HCC grading scale, campus carry and safety, transfer planning, complaints, student services, rights and responsibilities etc.: http://www.hccs.edu/resources-for/current-students/student-handbook/
EGLS³	The EGLS ³ (Evaluation for Greater Learning Student Survey System) will be available for most courses near the end of the term until finals start. This brief survey will give invaluable information to your faculty about their teaching. Results are anonymous and will be available to faculty and division chairs after the end of the term. EGLS ³ surveys are only available for the Fall and Spring semesters. EGLS3 surveys are not offered during the Summer semester due to logistical constraints. https://hccsaweb.hccs.edu:8080/psp/csprd/?cmd=login&languageCd=ENG&
Tutoring	HCCS provides free online and on campus tutoring for all HCC students: https://hccs.upswing.io

Biology Program Student learning Outcomes (PSLOs) and Course Student Learning Outcomes (CSLOs):

PSLO 1	Students will display an understanding of biological systems and evolutionary processes spanning all ranges of biological complexity, including atoms, molecules, genes, cells, and organisms.
PSLO 2	Students will demonstrate the ability to think critically and to integrate factual and conceptual information into an understanding of scientific data by written, oral and/or visual communication; this may include successful completion of a course---specific research project or a case study module.
PSLO 3	Students will demonstrate proficiency and safe practices in the use of laboratory equipment and laboratory techniques.
PSLO 4	Students will apply principles of the scientific method to problems in biology in the collection, recording, quantitative measurement, analysis and reporting of scientific data.
CSLO 1	Deduce information about genes, alleles and gene functions from analysis of genetic crosses and patterns of inheritance.
CSLO 2	Describe the molecular anatomy of genes and genomes.
CSLO 3	Describe the mechanisms by which an organism's genome is passed on to the next generation.
CSLO 4	Describe the phenomenon of linkage and how it affects assortment of alleles during meiosis.
CSLO 5	Describe the processes that can affect the frequency of phenotypes in a population over time.
CSLO 6	Compare different types of mutations and describe how each can affect genes and the corresponding mRNAs and proteins.
CSLO 7	Apply the results of molecular genetic studies in model organisms to understanding aspect sof human genetics and genetic diseases.
CSLO 8	Interpret results from molecular analyses to determine the inheritance patterns and identities of human genes that can mutate to cause disease.
CSLO 9	Describe the molecular basis of replication, transcription and translation in Eukaryotes and Prokaryotes.

TENTATIVE Course Assignment & Exam Schedule:

Week	Tuesday (Lecture Activities)	Thursday (Lab Activities)*	Sunday Homework (Due Online by 11:59PM)
1: Jan 14-Jan 20	Syllabus Module 1 (Chapter 1) Flashcards & Cornell Notes Tips	Lab Safety Lab Notebook Rules Microscope Skills Lab**	Module 2 Pre-Lecture Module Quiz 1
2: Jan 22-Jan 27	Module 2 (Chapter 2)	Onion Mitosis Lab**	Module 3 Pre-Lecture Module Quiz 2
3: Jan 28-Feb 3	Module 3 (Chapter 3 and 4)	Fly Lab Part I (setting up P crosses) Virtual Fly Lab Exercises (VGL)	Module 4 Pre-Lecture Module Quiz 3
4: Feb 4-Feb 10	Lecture Exam 1 (Module 1-3) Module 4 (Chapter 5)	Fly Lab Part 2 (clearing F ₁ vials) DNA Extraction Lab	Module 5 Pre-Lecture Module Quiz 4
5: Feb 11-Feb 17	Module 5 (Chapter 6 and 7)	Fly Lab Part 3 (scoring & crossing F ₁)	Module 6 Pre-Lecture Module Quiz 5
6: Feb 19-Feb 24	Module 6 (Chapter 8 and 9)	Fly Lab Part 4 (clearing F ₂ vials) Transformation Lab** (Part 1)	Module 7 Pre-Lecture Module Quiz 6
7: Feb 25-Mar 3	Lecture Exam 2 (Module 4-6) Module 7 (Chapter 10 and 11)	Fly Lab Part 5 (scoring F ₂) Transformation Lab** (Part 2)	Module 8 Pre-Lecture Module Quiz 7
8: Mar 4-Mar 10	Module 8 (Chapter 12 and 18; pg.544-558 only)	Transformation Lab** (Part 3)	Module Quiz 8
Spring Break: Mar 11-Mar 17	NO CLASS	NO CLASS	Module 9 Pre-Lecture
9: Mar 18-Mar 24	Module 9 (Chapter 13 and 14)	Virtual Transgenic Fly Lab (HHMI)**	Module 10 Pre-Lecture Module Quiz 9
10: Mar 25-Mar 31	Lecture Exam 3 (Module 7-9) Module 10 (Chapter 15 and 18; pg. 515-543 only)	Micropipet & Centrifuge Skills Lab**	Module 11 Pre-Lecture Module Quiz 10
11: Apr 1-Apr 7	Module 11 (Chapter 16 and 17)	GMO Lab** (Part 1-DNA Prep & PCR)	Module 12 Pre-Lecture Module Quiz 11
12: Apr 8-Apr 14	Module 12 (Chapter 19 and 20)	GMO Lab** (Part 2-Gels) Bioinformatics Lab	Module 13 Pre-Lecture Module Quiz 12
13: Apr 15-Apr 21	Lecture Exam 4 (Module 10-12) Module 13 (Chapter 21 and 22)	Karyotyping Lab**	Module 14 Pre-Lecture Module Quiz 13
14: Apr 22-Apr 28	Module 14 (Chapter 23)	Poster Presentation	Module 15 Pre-Lecture Module Quiz 14
15: Apr 29-May 5	Module 15 (Chapter 25 and 26)	Practical Exam Lab Notebook Due	Module Quiz 15 Final Exam Readiness Quiz
16: May 6-May 12	Lecture Exam 5 (Module 13-15) Comprehensive Final Exam (Module 1-14)	NO CLASS	

* ALL lab activities must be documented in the lab notebook using proper notebook rules; the notebook is due May 2.

** These lab activities come with ADDITIONAL paper worksheets that are always due 1 week after activity completion.

Important dates:

Jan 21: Martin Luther King Holiday

Jan 28: Official Date of Record

Feb 18: President's Day Holiday

Apr 1: Last day to Withdraw with Grade of W (check financial aid consequences – YOU must initiate!)

Mar 11-Mar 17: Spring Break

Apr 19: Spring Holiday

May 7: Comprehensive Final Exam

The instructor reserves the right to make changes to this syllabus.