

Human Genetics BIOL - 12

Chaffey College – Rancho Campus - Fall 2018

Lecture: Tuesday & Thursday 3:30 pm – 4:50 pm in HS 143

Lecture only, No prerequisites

Instructor

Name: Sandra Namoff, PhD

Email: sandra.namoff@chaffey.edu

Office Hours: Tuesday 5:15 – 6 pm in ZH 127 (Science Resources Room) or email me

Welcome to Human Genetics! In this course, you will learn about the most studied organism on earth, humans. The course covers the fundamentals of human heredity. Topics include patterns of inheritance, DNA structure and function, the role of mutation in genetic diseases and cancer, the interaction between genes and the environment, and recent advances in biotechnology and its impact on society. You will learn how the scientific method is used to answer questions. In this course, we are all students learning from each other and I am looking forward to meeting and working with all of you this semester.

Course Material

- Pierce, B. A. (2013). *Genetics essentials: Concepts and connections*. WH Freeman.
- Lecture slides & homework assignments via Canvas or Dropbox
- 6, 882-E scantrons needed

Course Objectives - In this course you will

- Distinguish questions that can be addressed scientifically from those that cannot, and identify basic components of the scientific method as it pertains to human heredity,
- Recognize unifying theories and concepts in biology (e.g. structure & function of DNA & proteins, inheritance, & gene expression) within an evolutionary context.
- Demonstrate the ability to comprehend current events related to human genetics.
- Experience the sense of discovery achievable through science and demonstrate a motivation to continue learning about topics related to human genetics and inheritance outside the classroom.

Evaluation

Your course pathway is outlined below.

Graded Activities	Maximum Points
HW Assignments (completion)	10 each
Unit Exams (1-3)	50 each
Final Exam unit 4 (75 %) + units 1-3 (25 %)	125 total
Participation & in class assignments	2-5 each
extra credit	possible

Letter	Grade Scale	Letter	Grade Scale
A+	98-100	C+	77-79.9
A	93-97.9	C	73-76.9
A-	90-92.9	C-	70-72.9
B+	87-89.9	D+	68-69.9
B	83-86.9	D	63-67.9
B-	80-82.9	D-	60-62.9
		F	0-59.9

- You must be in class to receive credit for exams, homework, and in-class activities.
- **There will be no make-up exams or assignments.** If you miss an exam or assignment for an unforeseen and serious reason, it is your responsibility to notify me within eight hours of the test time via email. You

have seven days from the date of the missed exam to provide me with documentation. If you provide appropriate documentation, then points from your missed exam will be replaced with the average of your other exams.

Course Expectations and Policies

- You will be dropped from the course if you are not counted as part of the roster on the first day of class.
- Check your Chaffey email and Canvas everyday for class announcements and updates.
- Class materials will be posted through Dropbox or Canvas.
- Arrive to lecture on time and prepared.
- Maintain a respectful, positive working environment. Do not use cell phones in class. Participation points will be deducted for distracting your neighbors.
- If you would like to use an accommodation, you must notify me by email two weeks before an assignment is due or exam is scheduled (for students registered with Disability Programs and Services (DPS) at Chaffey College).
- Cheating is not tolerated! Think about why you are in college. Hopefully, the goal is for you to learn and find the path that is right for your life. Will you make cheating part of that path? If you do and get caught, you will get zero points on the assignment. More than one offense and you will be reported as per the Chaffey's Conduct and Disciplinary procedures. I have reported students, and would do it again...

Recommendations

- Come to class prepared and ready to learn.
- Take hand-written notes. Studies have found that writing notes by hand requires students to listen, understand, and summarize what they have learned in ways that often don't happen in typed notes. This is because while typing, you can quickly write what is being said in a lecture format word for word, without thinking about what you are learning. (<https://www.scientificamerican.com/article/a-learning-secret-don-t-take-notes-with-a-laptop/>)
- I will post lecture slides but clicking through them is not an active form of studying. Please review your hand-written notes from class, read the text and do homework assignments.
- Always feel free to email me questions. If it is difficult to explain something over email, I might ask you to come in during office hours or we can talk about your question in further detail after class.
- Let me know how I can help. Are there certain things that would help you in lecture (more examples, group problem sets, slower pace, etc.)? I appreciate constructive feedback. We are all students here and I am constantly learning too. I can help you generate a plan of action for the course.

Lecture Schedule

Week	Day	Date	Chapters	Topic	Exams and Assignments
1	T	8/21	1	Welcome Day & Introduction to Genetics	
	TH	8/23	(pdf provided)	Chemistry of Life and Cell structure	
2	T	8/28	2	Chromosomes and Cellular Reproduction	HW 1 due in class
	TH	8/30	2	Chromosomes and Cellular Reproduction (cont.)	
3	T	9/4	3	Heredity	HW 2 due in class
	TH	9/6	3	Heredity (cont.)	
4	T	9/11		Review for Exam1	HW 3 due in class
	TH	9/13	1 to 3	Exam 1	
5	T	9/18	4	Extension of the Basics	
	TH	9/20	4	Extension of the Basics	
6	T	9/25	5	Linkage and Recombination	HW 4 due in class
	TH	9/27	6	Chromosome Variation	
7	T	10/2		Review for Exam 2	HW 5 due in class
	TH	10/4	4 to 6	Exam 2	
8	T	10/9	8	Molecular Genetics	
	TH	10/11	9	DNA Replication and Recombination	HW 6 due in class
9	T	10/16	10	DNA to RNA	
	TH	10/18	11	DNA to Proteins	HW 7 due in class
10	T	10/23	12	Control of Gene Expression	
	TH	10/25	13	Mutations and Gene Repair	HW 8 due in class
11	T	10/30		Case Study - In Class discussion	Case Study Questions - due at 2:30 pm on Canvas
	TH	11/1		Review for Exam 3	HW 9 due in class
12	T	11/6	3 to 13	Exam 3	
	TH	11/8	18	Population Genetics and Evolution	
13	T	11/13	18	Population Genetics and Evolution	
	TH	11/15		Prof. Namoff Research Talk	HW 10 due in class
14	T	11/20	14	Biotechnology	
	TH	11/22		Crisper and Society...	
15	T	11/27	15	Genomics	HW 11 due in class
	TH	11/29		Thanksgiving - No Class	
16	T	12/4	16	Cancer Genetics	HW 12 due in class
	TH	12/6	17	Quantitative Genetics	
17	T	12/11		Exam 4 Review	HW 13 due in class
	TH	12/13	14 to 18	Exam 4 - 75% (Ch. 14-18) & 25% previous Chs.	
Finals	T	12/18		no regular classes on finals week	
	TH	12/20		Final Student Meeting - Complete Class Evaluations 2:15 pm to 4:45 pm	

This course schedule is subject to change.

Mission Statement

Chaffey College inspires hope and success by improving lives and our community in a dynamic, supportive, and engaging environment of educational excellence, where our diverse students learn and benefit from foundation, career, and transfer programs.

Vision Statement

Chaffey College: Improving lives through education

Academic Support

Student Success Centers

Chaffey College has created a network of Student Success Centers – offering free tutorials, workshops, learning groups, directed learning activities, and computer/resources access – to assist students in their academic development and success.

A current Chaffey College photo ID card is required for all Success Center services. Walk-ins are welcome, and advanced appointments are available for most services. Call the centers or consult the college website.

Student Success Center Website: www.chaffey.edu/success/

Online appointments: <https://chaffey.mywconline.com/>

Chino Campus Success Center	Multidisciplinary Success Center	CHMB-145	909-652-8150
Fontana Campus Success Center	Multidisciplinary Success Center	FNFC-122	909-652-7408
Rancho Campus Success Center	Language Success Center	BEB-101	909-652-6907/652-6820
	Math Success Center	Math-121	909-652-6452
	Multidisciplinary Success Center	Library	909-652-6932

Library

Rancho Campus Library: Mon-Thurs 7:30am-8pm / Fri 8am-4pm / Sat 10am-3pm / CLOSED Sunday

Fontana and Chino Cybrary: Mon & Thurs 7:45am-3:45pm / Tues & Wed 7:45am-7:45pm / Fri 10am-2pm / Sat 10am-3pm / CLOSED Sunday

One Book, One College

<http://www.chaffey.edu/collegebook/index.shtml>

The One Book, One College Committee strives to create a community of readers across the curriculum at Chaffey College and within the communities it serves. Each year, the committee selects a college book and creates a diverse series of related events. Students are encouraged to participate in these activities to enrich their educational experience at Chaffey.

Wignall Museum of Contemporary Art

<http://www.chaffey.edu/wignall/exhibitions.shtml>

The Wignall Museum of Contemporary Art serves as a learning lab featuring temporary exhibitions of innovative contemporary art throughout the year. Exhibitions and programming are organized with our students in mind in order to augment their academic experience by complementing the college's curricula and broadening the understanding of contemporary art. Our exhibitions allow visitors to see and experience a variety of contemporary artistic practices that examine timely and relevant topics.

Health Services

Student Health Services

Student Health Services is dedicated to assisting students to achieve and maintain optimum physical, mental and emotional health. We are committed to providing quality healthcare at a reasonable cost. All currently enrolled full and part time Chaffey College students on the Rancho Cucamonga Campus or any off campus site may utilize the services of the Student Health Office. Please have your Chaffey ID ready.

Rancho Campus	MACC-202	(909) 652-6331
Chino Campus	CHMB-105	(909) 652-8190

Scholarships

CCSG Scholarships

The Chaffey College Student Government (CCSG) awards approximately \$100,000 in scholarships each spring semester to Chaffey students. Visit the Office of Student Life or call 652-6590 for details.

Foundation Scholarships

www.chaffey.edu/scholarships

The mission of the Chaffey College Foundation is that no individual be denied an education at Chaffey College due to a lack of financial resources. Essential to this mission is the wide array of scholarship opportunities available to Chaffey College students. All Chaffey College students may qualify for Foundation scholarships. Criteria may be based on GPA, major, or units registered. Citizenship is not a requirement to qualify for Foundation scholarships.

How to apply for a Foundation Scholarship Application:

1. Visit www.chaffey.edu/scholarships to access our scholarship application link. You will be directed to the electronic application form. The link is active August 14 - September 2, 2018 for the fall 2018 semester and January 8 - January 27, 2019 for the spring 2019 semester.
2. Complete the application entirely on the directed link and submit electronically.
3. Check your panther email two to three weeks after the application deadline for award notification.

Student Support Services and Resources

Bookstore / Campus Store

books.chaffey.edu

The non-profit Chaffey Bookstore offers students all their required materials including textbooks (new, used, rental, and digital), school supplies, study aids, and more at competitive prices. They also offer a price comparison tool on their website (books.chaffey.edu) that shows the bookstore's price for books compared to their major competitors. Store locations on each campus offer daytime and evening hours during the week plus services on select Saturdays. Cash, credit, debit, and most types of financial aid are accepted. SNAP/EBT cards are also accepted at the Panther Express on the Rancho Campus.

Brothers Forum

The Brothers Forum is a series of bi-weekly meetings that include mentorship, success stories, study sessions, professional development, and campus engagement. Our vision is to inspire African American males to reveal who they are and empower them to achieve their life goals. The Brothers Forum is designed to provide the support and guidance required during our students' journeys toward success in obtaining a post-secondary education that will align with their career pathways. Contact: Ray Austin, 909-652-6549 or ray.austin@chaffey.edu

Center for Culture and Social Justice (CCSJ)

Mission Statement: The Center for Culture and Social Justice (CCSJ) is a culturally conscious safe-haven dedicated to cultivating socially responsive leaders. Unwaveringly committed to fostering solidarity and amplifying the student voice, the CCSJ will evolve with the needs of our student population, always seeking to empower, inspire and encircle the Panther community.

Location:	AD-109
Monday-Thursday	8am - 7pm
Friday	8am - 2pm

CalWorks

The CalWORKs Program at Chaffey College assists students who receive cash aid and are required to participate in Welfare-to-Work/GAIN programs. Students must be either enrolled, or plan to enroll in an academic program at Chaffey College and must be receiving cash aid for themselves as well as for their child/children. We provide educational planning services to students and collaborate with the San Bernardino County Transitional Assistance Department (TAD), Los Angeles County Department of Public Social Services (DPSS), and Riverside County DPSS to help students meet their Welfare-to-Work/GAIN requirements. Students meet with a counselor for completion of required documents (Individual Education Plans, training verifications for child care approval, attendance, progress reports, book requests, etc.) as well as for regular progress checks. CalWORKs counselors trained in Welfare-to-Work legislative requirements meet with each student individually to address barriers to academic success and provide resources and referrals as appropriate.

Campus Police Department

The Chaffey College Police Department is operational 24 hours a day, seven days a week, year-round. There is always a police officer on duty who will respond to calls for assistance. The phone number for a police response is (909) 652-6911. The police department lobby at the Rancho Campus is open Monday through Friday 7:30 am to 4:00 pm. Lost and found property is maintained by the Chaffey College Police Department located on the Rancho Campus in Campus Center East next to the Bookstore. Students can also request an escort throughout the three campuses and parking lots.

Career Center

The Career Center helps Chaffey College students find meaningful careers. The program offers career counseling, career assessments, résumé assistance, interviewing skills preparation, job referrals, student employment, and career related workshops. The Career Center is located on the Rancho Cucamonga Campus in MACC-203. Please call (909) 652-6511 for more information.

Child Development Center

The Child Development Center, located at the Rancho Cucamonga Campus, provides low cost, high quality child care services for children ages 18 months to Kindergarten. The Center is licensed by the State of California, Title 22, and provides subsidized childcare services through funding from the California State Department of Education. Parents who are eligible for free or reduced childcare services will pay fees according to a sliding fee scale provided by the State Department of Education. The center participates in the Child and Adult Care Food Program (CACFP) offered by the U.S. Department of Agriculture (USDA) and serves meals at no separate charge to all enrolled children. The Child Development Center welcomes all children regardless of sex, race, religion, ethnicity, national origin or ability. This institution is an equal opportunity provider and employer. Students enrolled in various child development courses may complete their assignments in the Child Development Center program. Pediatric Nursing, Psychology, and Food Service Management courses utilize the Child Development Center as a field of placement site. For information on fees, enrollment procedures, or job openings please call (909) 652-6875.

Counseling Department

The Counseling Department provides career, academic, and personal counseling to assist students in successfully completing their educational goals. Services include orientation, assessment, comprehensive educational planning, graduation applications, external transcript evaluations and prerequisite verifications, educational planning workshops, college success and career exploration courses, specialized programs such as AMAN/AWOMAN/Umoja, Puente, and Opening Doors to Excellence. The department is located in the lower north lobby of the Student Services Administration building. Counseling services are also provided at the Chino and Fontana campuses. (909) 652-6200

Disability Programs & Services

Chaffey College's Disabled Students Programs and Services, or DPS, serves an estimated 1500 students across all Chaffey campuses. DPS serves students with physical, learning, and psychological/psychiatric disabilities by providing accommodations based on the type of disability and verifying documentation. Services include academic counseling, disability related counseling and referral for community resources, test accommodations, tram services, adapted computer lab, assistive technology training, assessment, and equipment loan. (909) 652-6379.

Dreamers / Undocumented Students

<http://www.chaffey.edu/dreamers/>

Students who are undocumented / AB 540 / DACA recipients are welcome at Chaffey College and should visit the Dreamers' website for more information: <http://www.chaffey.edu/dreamers/>

EOPS & CARE

Extended Opportunity Programs and Services (EOPS) is designed to ensure student retention and success through academic support and financial assistance for eligible students. Cooperative Agencies Resources for Education (CARE) is a program that serves a limited number of EOPS students who are single heads of household parents. It provides additional support services beyond those available through EOPS. The ultimate goal is completion of a certificate program, an associate degree, and/or transfer to a four-year college. Call (909) 652-6345 for more information.

Faculty Advisors

http://www.chaffey.edu/faculty_advisor/

Faculty Advisors provide the opportunity for students to obtain valuable major and career information regarding their chosen field of study. Faculty Advisors are located in various locations across Chaffey College's campuses. Visit the program's website: http://www.chaffey.edu/faculty_advisor/

GPS Centers

The Guiding Panthers to Success centers (GPS) provide new and returning Chaffey College students with assistance in registration, unit load planning, logging in and utilization of MyChaffeyView, campus resources, as well as the development and creation of Abbreviated Education Plans (first year course recommendations). Our current Chaffey College students can also visit the GPS center to check progress on academic goals through an online tool known as “Degree Audit.” Many services are provided on a walk-in basis.

Rancho GPS: VSS-111

Chino GPS: CHMB-240

Fontana GPS: FNFC-121

Grad Guru App

www.gradguru.org

Want to succeed at Chaffey? Download the free GradGuru app for important reminders and tips that will help you achieve your goals. Information on deadlines, campus events, and college resources is right at your fingertips. Earn electronic badges to motivate you and redeem rewards! Get it on Google Play or download at the Apple App Store.
www.gradguru.org

Honors Program

<http://www.chaffey.edu/honors>

The Honors Program provides an intellectual and cultural community for students at Chaffey College. Program benefits include smaller classes, creative and challenging coursework, academic enrichment activities, and scholarships. Students also have opportunities to present research at scholarly conferences, build social responsibility through community service, and receive ongoing personalized academic advisement as well as support during the transfer process. Students who complete the Honors Program may take advantage of our transfer agreements with prestigious institutions like UCLA. Visit <http://www.chaffey.edu/honors> or SSA-122 for more information and admission requirements.

Independent Scholars

<http://www.chaffey.edu/independentscholars/>

Independent Scholars Program is a counseling support program aimed at providing unique and personalized educational services to current and former foster youth. It serves as a resource by assisting students at all stages of their college career and equipping them with skills necessary to transfer to a four year university or the vocation of their choice. Participants in the Independent Scholars Program receive priority registration, individual counseling support, grants for textbooks and educational supplies, skill-building workshops, mentoring, referrals to community and campus resources, and a student support network. Contact: Abel Berdusco, 909-652-6548 or ischolar@chaffey.edu.

Panther Pantry

The Panther Pantry provides FREE food supplies to Chaffey College students who are experiencing hardship. The Panther Pantry empowers Chaffey College students to reach their full academic potential by providing food to those in need, promoting the value of nutrition, and increasing food insecurity awareness to our community. Our goal is to inspire hope and academic excellence as we respect the dignity of each student we serve. Contact: Tiffany Coleman, 909-652-6505 or tiffany.coleman@chaffey.edu

Sisters Forum

The Sisters Forum is a series of bi-weekly meetings for women deigned to create a safe space for real talk, real connections mentorship, and campus engagement. We seek to empower African American women to realize their full potential and achieve their dreams. Contact: Aysia Pennell, 909-652-6516 or aysia.pennell@chaffey.edu

Transfer Center

www.chaffey.edu/transfer.

The Transfer Center is located in SSA 120 on the Rancho Cucamonga Campus. We are open Monday and Thursday from 7:30am to 7:00pm; Tuesday and Wednesday 7:30am-4:30pm; and Friday 7:30am-4:00pm. Transfer services are also available at the Fontana Campus on the 1st Tuesday and 3rd Thursday of each month and at the Chino Campus on the 2nd Monday and 4th Wednesday of each month. Call us at (909) 652-6233 or visit the website at www.chaffey.edu/transfer.

Transitional Services

Transitional Services is committed to identifying solutions that address the needs of students experiencing food and housing insecurity by connecting them to resources available to foster their success. Contact: Lorena Corona, 909-652-6507 or lorena.corona@chaffey.edu

Veterans & Eligible Family Members

Chaffey College's Veterans Resource Center (VRC) is dedicated to assisting veterans and eligible family members in achieving their educational goals efficiently and without impediments. If you are a veteran or eligible family member, please contact the Veterans Resource Center at (909) 652-6235 or vrc.staff@chaffey.edu for information regarding educational benefits and opportunities. The Veterans Resource Center (VRC) is located in AD-125 on Chaffey College's Rancho Cucamonga campus.

Name: _____

Name you would like to be addressed by in class: _____

Preferred gender pronouns: _____ (examples are she, he, they, etc.)

1. Major or field of interest (nursing, English, history, music, etc.) and any hobbies/career/life goals:
2. Number of courses you are taking this semester _____
3. Is there anything else you would like to share? (responsibilities, disabilities, subjects you have found difficult, etc.)
4. Do you have any concerns about this course?
5. Do you have a preferred learning style or is there anything that you have benefited from in other courses you have taken? [This could include certain class activities, videos, projects, repetition of course material]
6. How many points can you earn if you simply turn in all of your homework assignments? _____
7. What happens if you get caught cheating?

I have reviewed and understand the policies of BIOL-12 (FA18), including that make-up exams are not offered.

Printed Name

Signature

Date