

Course Syllabus - Introductory Genetics 3200 A and B – Fall 2009

BIOL 3200 Genetics - 3 Credit Hours

Prerequisite: MATH 1113, BIOL 1107, BIOL 1108 or permission of the instructor. A survey of modern genetics including: Mendelian and molecular genetics, as well as selected topics in population and quantitative genetics and genetic engineering. Laboratory will emphasize genetic analysis using *Drosophila* and computer simulated crosses, chi-square analysis of progeny data, and application of these principles to laboratory analysis of genetic variation at the DNA level

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Lecture:

Section A: 9:00 am - 10:45 am Tu. & Th, . Room 1024 Bailey Science Center.

Section B: 3:30-4:45pm Mon. & Wed. Room 2022 Bailey Science Center

Office Hours: 11:00 - 12:00am Monday and Tuesday 10:00-11:00 Wednesday or appointment. I also have an open door policy, I encourage students to drop by whenever they may need help with the course. Please understand however, that under these circumstances, you may have to wait until I am free of other things.

Text: Genetics: Hartwell *et al.*, 2006. *Genes: From Genes to Genomes*. 3rd edition. McGraw Hill.

Course Objectives: Students are expected to demonstrate through their performance on tests and homework problems that they have learned a basic body of factual information and gained an understanding of the basic processes of genetics. Gaining an ability to logically understand and solve formal mathematical genetics problems is necessary and integral to this course. A reasonable amount of study and problem practice time should be allocated to this course. A few hours study, the night before exams will not be sufficient to score well in this course. Achievement of the above objectives will be evaluated based upon the student's satisfactory completion of all class and homework exercises as well as performance on tests and examinations.

Assessment/ Grading policy: Letter grades will be based upon a 10 point scale. Homework assignments will constitute 10% of the overall final grade, and the lecture tests will compose the other 90 % of the overall grade. The number of homework assignments will be determined as need arises. There are 3 tests and a final exam falling on the date of the university scheduled exam. The final exam may be cumulative and may include new material. Overall the grading values will be: Tests and exam = 90%, homework = 10%. **Exams:** Don't miss exams. Absolutely no makeup tests or exams will be given. A grade of zero will be assigned for all missed assignments. No late tests or course assignments will be accepted for a grade.

Some Basic Class Rules:

1. Turn in assignments on time. No late assignments will be accepted for a grade.
2. Do assignments exactly as instructed. Do not change formats, page lengths, or content.
3. Do not try to negotiate homework, test or assignments. They are not optional, nor changeable. They must be complete.
4. Be on time for tests, lectures and labs. Doors will be closed 10 minutes after the beginning of class on test days. Late arrivals will not be able to take the test and a grade of zero will be assigned. Be aware, one is enough to fail the course.
5. NO disruptive behavior will be tolerated (as defined in your student handbook, page 24). Anyone disrupting class will be asked to leave, perhaps permanently, may be dropped from the class or failed and this is solely at the instructors' discretion.
6. **Honor Policy:** Cheating nor plagiarism will not be tolerated in this class and will be prosecuted to the full extent allowed by university policy and the law. Cheating and plagiarism will be considered to be any act so defined in the university handbook

This course adheres to the university policy on academic integrity as set forth in the undergraduate catalogue (pages 93-94):

ACADEMIC DISHONESTY

Academic integrity is the responsibility of all VSU faculty and students. Faculty members should promote academic integrity by including clear instruction on the components of academic integrity and clearly defining the penalties for cheating and plagiarism in their course syllabi. Students are responsible for knowing and abiding by the Academic Integrity Policy as set forth in the *Student Code of Conduct* and the faculty members' syllabi. All students are expected to do their own work and to uphold a high standard of academic ethics. Appendix A of the *Student Code of Conduct* in the *VSU Student Handbook* outlines academic integrity violations as well as the academic response and disciplinary response to such violations < <http://www.valdosta.edu/studentaffairs/StudentHandbook.shtml> >. The online *VSU Student Handbook* reflects the most current policy on academic integrity. Academic integrity violations may result in suspension or expulsion from the university. Additional information on academic integrity as well as resources for faculty and students can be found at the Academic Affairs website: < <http://www.valdosta.edu/academic/AcademicHonestyatVSU.shtml> >.

Plagiarism

Plagiarism is defined as "the copying of the language, structure, ideas, and/or thoughts of another and passing off same as one's own, original work." The violation, then, consists of both copying and misrepresenting the material in question. When a student places his or her name on any kind of work, he or she claims responsibility for the originality of the contents except for those parts that are specifically attributed to another or that are considered common knowledge. If a student has consulted any outside source, whether published or not, and has incorporated any of its "language, structure, ideas, and/or thoughts" into his or her work without acknowledging that source, he or she may be guilty of misrepresenting the work's originality. When paraphrasing material from an outside source, the student must change both the sentence structure and the vocabulary (where possible) in expressing the original material in his or own words. Any instance where the "language, structure, ideas, and/or thoughts" have been borrowed from another's work, paraphrased or not, without proper reference/citation, the act constitutes plagiarism on the part of the writer.

Inappropriate Use of University Computing Facilities

Students are expected to comply with all rules pertaining to the use of the University's computers. These are described in detail in the Code of Ethics contained in the *Student Handbook*. The misappropriation of intellectual property, i.e., software piracy, or the use of the computers for personal or commercial gain is prohibited. Students are expected to respect the privacy of others in all matters of access and records.

Absentee policy: I assume that students in this class are adults and are responsible for their own attendance and study habits. Students should also be aware of the following university policies that I have no choice in enforcing: **(1) Students who miss 20% of lecture time will receive an automatic failing grade for the course. (2) Students who do not regularly attend lecture, as determined by taking class role, by the proof role date will be automatically dropped from the class. (3) Students who neither drop nor attend class by the midterm date will receive an automatic F for the course. Also note: students are responsible for the text and lecture material on exams regardless of whether or not they come to class routinely. It is unlikely that students can perform well on exams in this class with poor attendance.**

Dropping A Course Without Penalty: In order to officially drop a course without penalty, a student must obtain and fill out a drop/add form from the Registrar's Office, acquire appropriate signatures, and return the completed form to the Registrar's Office before the designated date (published in the academic calendar). If you don't officially withdraw, and instead just stop coming to class, you will receive an F for the course.

Family Educational Rights and Privacy Act: Grades cannot be posted by name, Social Security number or other personal identifiers, nor given out over the telephone

ADA Statement: Students requesting classroom accommodations or modifications because of a documented disability must contact the Access Office for Students with Disabilities located in room 1115 Nevin's Hall. The phone numbers are 245-2498 (voice) and 219-1348 (tty).

Tentative schedule:

TENTATIVE SCHEDULE OF IMPORTANT DATES

Please note that test dates are tentative and may change depending on the rate at which material is covered. Tests may be postponed but will never be moved ahead.

August				
Monday	17	-	1 st class	
September				
Monday	7	-	Labor Day – No classes	
Monday	14	-	Section B – Test 1	
Tuesday	15	-	Section A – Test 1	
October				
Thursday	8	-	Midterm	
Monday	12	-	Section B – Test 2	
Tuesday	13	-	Section A – Test 2	
Sat -Tues.	17-20	-	Fall Break – No classes	
November				
Monday	23	-	Section B - Test 3	
Tuesday	24	-	Section A – Test 3	
Wed. – Sun.	25-29	-	Thanksgiving – No Classes	
December				
Monday	7	-	Last class day	
Tuesday	8	-	Exam Prep Day	
Thursday	10	-	Section A Final Exam 10:15 am – 12:15 am	
Friday	11	-	Section B Final Exam 5:00 pm – 7:00pm	

Course outcomes:

Departmental Outcomes as listed in the undergraduate catalogue (page 108):

The program of study in the Department of Biology has numerous desired outcomes. Examples of these outcomes include the following:

Educational Outcomes

1. Develop and test hypotheses, collect and analyze data, and present the results and conclusions in both written and oral formats used in peer-reviewed journals and at scientific meetings.
2. Describe the evolutionary processes responsible for biological diversity, explain the phylogenetic relationships among the major taxa of life, and provide illustrative examples.
3. Demonstrate an understanding of the cellular basis of life.
4. Relate the structure and the function of DNA/RNA to the development of form and function of the organism and to heredity.
5. Interpret ecological data pertaining to the behavior of the individual organism in its natural environment; to the structure and function of populations, communities, and ecosystems; and to human impacts on these systems and the environment.

Specific course outcomes keyed to departmental and university expected educational outcomes:

By the end of this course, as demonstrated by performance on tests, homework problems and written laboratory reports, students will:

1. know and understand basic principles and relevant examples of Mendelian inheritance. **(departmental outcomes 1 through 5, university outcome 5).**
2. know and understand non-Mendelian principles and relevant examples of inheritance. **(departmental outcomes 1 through 5 university outcome 5,).**
3. use both Mendelian and non-Mendelian principles to solve genetics problems. **(departmental outcomes 1, 2 and 5, university outcome 5).**
4. know and use basic rules of probability to predict the outcomes of various matings. **(departmental outcomes 1, 2 and 5, university outcome 5 and 7 university outcome 3, 5 and 7).**
5. use statistical methods to analyze data and test Mendelian hypotheses. **(departmental outcomes 1 and 2, university outcome 3, 5 and 7).**
6. understand the nature and function of the “gene” from the molecular to the phenotypic level. **(departmental outcomes 1 through 4 university outcome 5,).**
7. know and understand DNA and RNA structure and function. **(departmental outcome3, university outcome 5).**
8. know and understand basic gene regulation. **(departmental outcomes 2,3 and 4, university outcome 5).**
9. know and understand the value of allelic and other levels of genetic variation to individuals and populations. **(departmental outcomes 2, 4 and 5 university outcome 5,).**
10. know and understand population genetic effects on gene pools and microevolution. **(departmental outcomes 2, 4 and 5, university outcome 5).**
11. know and understand the relevance of population genetic effects to macroevolution. **(departmental outcomes 1, 2 and 5 university outcome 5,).**
12. use statistical methods to analyze population data sets to test evolutionary hypotheses relating to selection, migration, mutation and genetic drift. **(departmental outcomes 1, 2 and 5, university outcome 3, 5 and 7).**