

Course Syllabus - Introductory Genetics 3200/5200 Section A– Fall 2019

BIOL 3200, CRN 81998- Genetics - 3 Credit Hours- Section A.

Note there is no lab with this course.

Lecture: 2:00 – 3:15pm, Monday and Wednesday, Bailey Science Center Room 1011.

Prerequisite: MATH 1113, BIOL 1107, BIOL 1108 or permission of the instructor.

Course description: A survey of modern genetics including; Mendelian and molecular genetics, as well as selected topics in population and quantitative genetics and genetic engineering.

Professor: John F. Elder, 2088 Bailey Science, Phone (229) 333-5762

Email: jfelder@valdosta.edu

Office Hours: 1:00 - 3:00 pm Monday and 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.

Communication:

Email: Email is the simplest and primary way to contact me outside of class and is the quickest way for me to contact you as well. All email should be sent directly to jfelder@valdosta.edu. Make sure you identify the course you are in. You are required to check and maintain your Valdosta State University email account. I will only respond to your emails through this account.

Blazeview: I will routinely post grades, information, calendar dates and announcements on Blazeview. You will want to routinely check Blazeview regularly and often for relevant course information. **However, Do NOT email using the Blazeview system.**

Required Text:

- 1) **Benjamin A. Pierce. Genetics Essentials: ebook with Sapling online learning system subscription.** 4th Edition. W.H. Freeman & Company. ISBN-13: 978-1-3191-0849-6
- 2) **“Clickers or Responseware Ap”:** Each student is required to obtain a Turning Technologies NXT clicker (available in the bookstore) or licensed and functioning Responseware Ap on their smartphone. I recommend the Responseware subscription. The Ap that allows you to use your phone as a response device is available free from the Google Store. All students are responsible for having their clickers with them in class. All points accumulated during lecture are generated by clickers. If you do not bring your clicker, no points will be recorded for your participation or attendance.
 - a. Clicker info at: <http://www.valdosta.edu/distance/clickers/index.shtml>. The current Turning Technologies Intern works in the eLearning office (back behind the Help Desk in the library) and may be available to address issues students are having with clickers.

Additional Optional Materials:

Jung H. Choi & Mark E. McCallum. Solutions & Problem-Solving Manual for Genetics Essentials: Concepts & Connections. 2016. 3rd Ed. W.H. Freeman & Company. ISBN-13: 978-1-3190-2046-0

The Talking Glossary of Genetics @ the National Human Genome Research Institute (NIH):
<http://www.genome.gov/Glossary> Great resource for learning Genetic terms and definitions.

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. Students are responsible for the assigned reading material and all lecture

materials on tests. 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: Final letter grades will be based upon a 10 point scale. Sapling Homework assignments will constitute 15% of the overall grade, lecture tests will compose 75% of the overall grade and in class "clicker quizzes" will constitute 10% overall final grade.

- 1) **Three Lecture Exams & Final** (each 25%, up to 75%): Students will be tested on their knowledge, comprehension and application of all lecture, assigned reading material, vocabulary and ability for genetic problem solving. There are three Lecture Exams and one Final Exam (each worth 25%). The lowest exam score of the 4 will be dropped. Exams are multiple choice/scantron based and include both knowledge of factual material and problem solving ability.
- 2) **Online Homework sets** (average = 15%) The number and due dates of graded homework assignments will be determined and announced as need and class schedule develops. The purpose of homework sets is to develop skills needed for solving genetics problems on the tests. **No late or incomplete homework assignments will be accepted and will receive a grade of zero.**
- 3) **In class quizzes** (10%): Short, Multiple choice Quizzes covering the day's lecture concepts, problems and terminology will typically be given at the end of lecture. Quizzes will be conducted using "Turning Point Clickers or Responseware". Quizzes will be frequent so expect a quiz every day. **No quiz points will be given otherwise.**

Absentee policy: Don't miss exams or quizzes. Absolutely no makeup exams or quizzes 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.

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.**

Academic Honesty: This course adheres to the university policy on academic integrity as set fourth in the undergraduate catalogue Student Code of Ethics (pages 93-94): Any student caught cheating will receive an F on the assignment, possibly for the course and be reported to the Dean of Students.

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. Please be aware of the university policy that limits the number of dropped courses to 5.

Family Educational Rights and Privacy Act: The Family Educational Rights and Privacy Act (FERPA) prohibit the public posting of grades by Social security number or in any manner personally identifiable to the individual

student. No grades can be given by email or over the telephone, as positive identification can not be made by this manner.

Access Office Statement: Students with disabilities who are experiencing barriers in this course may contact the Access Office for assistance in determining and implementing reasonable accommodations. The **Access Office is located in Farbar Hall.** The phone numbers are 229-245-2498 (V), 229-375-5871 (VP) and 229-219-1348 (TTY). For more information, please visit VSU's Access Office or email: access@valdosta.edu.

Title IX Statement: Valdosta State University (VSU) is committed to creating a diverse and inclusive work and learning environment free from discrimination and harassment. VSU is dedicated to creating an environment where all campus community members feel valued, respected, and included. Valdosta State University prohibits discrimination on the basis of race, color, ethnicity, national origin, sex (including pregnancy status, sexual harassment and sexual violence), sexual orientation, gender identity, religion, age, national origin, disability, genetic information, or veteran status, in the University's programs and activities as required by applicable laws and regulations such as Title IX. The individual designated with responsibility for coordination of compliance efforts and receipt of inquiries concerning nondiscrimination policies is the University's Title IX Coordinator:

Maggie Viverette, Director of the Office of Social Equity, titleix@valdosta.edu, 1208 N. Patterson St., Valdosta State University, Valdosta, Georgia 31608, 229-333-5463.

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 19 – First Class

Thursday 22 – Registration ends

September

Monday 2 – Labor Day Holiday

Monday 16 - Test 1 ***TEST 1 *******

October

Monday 14 – Test 2 ***TEST 2 *******

Saturday 5 – Tuesday 8 – Fall Break

Thursday 10 – Midterm date (this is not an exam)

Thursday 17 – Last date to withdraw

November

Monday 11 – Test 3 ***TEST 3 *******

December

Monday 9 – Last class lecture

Monday 10 – Test 4 ***Final TEST 4*****
(2:450 – 4:45 PM – Room 1011)**

Some Basic Class Rules:

1. Students are responsible for all course materials covered in the text and in lecture.
2. Turn in assignments on time. No late assignments will be accepted for a grade.
3. Do assignments exactly as instructed. Show all work on assignments. Turning in partial assignments will not be sufficient.
4. Do not try to negotiate homework, tests, assignments or grades. They are not optional, nor changeable. They must be complete.

5. Be on time for tests and lectures. 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.
6. 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.
7. **Phones: Playing with phones, texting, etc. during lecture will not be tolerated. If you do you will be asked to leave once. The second time you will be dropped from the class and receive a failing grade regardless of test and assignment scores.**

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**).