

## **Introductory Genetics** **BIOL 3200(5200), Section A (3 credit hours), Fall Semester 2020**

**Lecture (UC Bldg #4 room 3124, Magnolia room): Monday and Wednesday 3:30 pm - 4:45 pm**

**This is a Hy-Flex course:** some students will attend F2F on designated days while other students will participate remotely. Students have been divided into two groups based on Last Name alphabetic order: Last Name A-M, F2F on Monday; Last Name M-Z, F2F on Wednesday. For the M Last name students, please refer to my email.

**Blazeview will be the online platform used for this course. Please check Blazeview daily.**

**Instructor:** Dr. Cristina Calestani  
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**Office hours:**  
Tuesday and Thursday 2:30 PM- 4:30 PM  
Or by appointment (please send me an email to my valdosta.edu account with “appointment” in the subject line).

**Pre-Requisites:** MATH 1112 or MATH 1113, BIOL 1107 and BIOL 1108 with a grade of C or better or permission of instructor.

### **Course Description (as stated in the Undergraduate Catalogue):**

A survey of modern genetics, including Mendelian modes of heredity, extensions and variations on Mendelian genetics, chromosomal inheritance and variation, molecular properties of genes, and basic quantification of genetic diversity at the population level.

### **Course Learning Outcomes**

This course learning outcomes support the achievement of the Department of Biology Educational Outcomes 1 through 5, and the VSU General Education Outcomes 3, 5, and 7. By the end of this course the students will be able to:

1. Demonstrate knowledge and comprehension of terminology and basic principles of genetic inheritance at the level of individuals and populations (Biology outcomes 1 through 5; VSU outcomes 3 and 5)
2. Demonstrate comprehension of how genetic variability is produced, maintained or lost, and predict the consequences on individuals, populations and ecosystems (Biology outcomes 2, 3, 4 and 5; VSU outcomes 3 and 5)
3. Demonstrate comprehension, and predict the outcomes of possible interactions between genetic and environmental factors. (Biology outcomes 1, 3, 4 and 5; VSU outcome 3 and 5)
4. Apply basic principles of inheritance to predict the outcome of genetic crosses and mating by using basic probability rules and statistical methods (Biology outcomes 1, 3 and 4, VSU outcome 3 and 5)
5. Analyze genetic data to infer the mode of inheritance of genetic traits (Biology outcomes 1, 3 and 4; VSU outcome 3, 5 and 7)
6. Evaluate the probability/risk of inheritance of genetic traits/diseases as applied to human health, plant and animal breeding. (Biology outcomes 1, 3 and 4; VSU outcome 3, 5 and 7)
7. Describe and demonstrate comprehension of the basic molecular and cellular mechanisms regulating genetic inheritance (Biology outcome 3 and 4; VSU outcomes 3 and 5)
8. Relate the structure and function of DNA/RNA to the development of form and function (phenotype) of the organism (Biology outcomes 3 and 4; VSU outcomes 3 and 5)
9. Demonstrate comprehension of experimental approaches used to test specific hypothesis in classical, population and molecular genetics (Biology outcome 1, 2, 3, 4, 5; VSU outcomes 3 and 5)

**Textbook**

*Genetics Essentials*, 4<sup>th</sup> edition, by Benjamin A. Pierce. Editor, W.H. Freeman & Company with Sapling Plus: ISBN:9781319108496 (e-book with Sapling Plus) or ISBN:9781319204358 (Loose-Leaf with Sapling Plus).

**Additional required material**

Clicker NXT Device & Turning Account-1 Year (Turning Technologies) or other Turning Technologies clickers.

**ASSESSMENTS**

**The course assessments will consist of four exams, in-class activities and online Sapling Plus Homework**

**Exams will be taken online during class time.** The fourth exam will be a comprehensive final. In-class activities will be assessed by using Clickers.

**Online exam 1,2,3, and 4 will require the use of Respondus LockDown Browser.** Instructions and technology requirements were emailed to students and are posted on Blazeview under the folder "Respondus". You need to take a practice quiz with Respondus on Blazeview at the beginning of the semester to avoid technological problems.

Exam grades will be posted on Blazeview.

- All exams are based on lecture material (powerpoints slides, in-class activities), assigned textbook readings, and homework.  
If you do not attend class on a regular basis you will be at a significant disadvantage.
- Exams questions are multiple choice, true/false, matching.
- If you fail to take one of the exams for any reason, you must provide documented evidence (e.g. from doctor, police, etc.) that circumstances beyond your control prevented you from taking the exam. Failure to provide reasonable evidence will result in a grade of 0 for the exam. Makeup exams will be administered at any time during the semester at the discretion of the instructor.
- If you access late the online exam you will be allowed to take the exam. However, you must submit the exam part the regular scheduled end of the class. You will not be allowed extra time unless a documentable emergency has occurred.
- The final exam grade (exam 4) can replace the lowest grade of exams 1, 2 or 3. This applies only to exam 4; no other exam can replace the lowest grade. If exam 4 is used to replace a lower grade for test 1, 2, or 3, the grade for exam 4 will count twice in the final grade calculation. Exam 4 cannot be used to replace a missed test.
- Exam 4 will always count in calculating the final grade.
- After each exam, students are strongly encouraged to review it. You can review an exam during office hours.

**Extra-credit up to a maximum of 10 points will be offered**

These points will be added to the student total points for the course before calculating the percentage grade. Extra-credit points can be earned by completing the online Sapling Plus Learning Curve activity.

## Grading

Test 1	100 points
Test 2	100 points
Test 3	100 points
Test 4	100 points
Homework	20 points
Clickers	20 points
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Total	440 points

Grade Distribution	
Letter	Percentage
A	90 - 100%
B	80 - 89%
C	70 - 79%
D	60 - 69%
F	≤ 60%

Extra-credit Online Sapling Plus Learning Curve 10 points

**Final grade: (Test points + Homework + clickers+ Extra-credit points)/440**

## Behavior in the Classroom

It is assumed that all students will act in a mature manner in the classroom, showing consideration for their peers and the instructor. Any student who consistently distracts other students or the instructor will be removed from the course. **Cell phones must be turned off or set to silent mode in the classroom.**

## Properly wearing a mask is mandatory in class.

As the Blazer Creed articulates, members of the VSU community are expected to live by the high standards of civility, integrity, and citizenship and embrace their responsibility as a member of the Blazer community. In recognition of this responsibility, and in response to the best available science and current guidance from the Centers for Disease Control and Prevention and the Georgia Department of Public Health, every student must wear a face covering that covers their nose and mouth at all times while in any campus building, including in this classroom. This requirement is intended to protect the health and safety of all VSU students, the instructor, and the entire university community. Anyone attending class without a face covering will be asked to put one on or leave. Students should also be sure they maintain a distance of at least six feet away from their fellow students and instructor and are seated in a seat that is designated to ensure that distance. (Add other appropriate language specific to the class here.) Students who refuse to wear face coverings appropriately or adhere to other stated requirements may face disciplinary action for Code of Conduct violations.

## Cheating or Plagiarism

Incidents of cheating or plagiarism will result in **an automatic F for the course and referral to The Office of Student Conduct for disciplinary action.** For VSU's Academic Integrity Code please see

<http://www.valdosta.edu/administration/student-affairs/student-conduct-office/>

For VSU's Academic Honesty policies and procedure please see <http://www.valdosta.edu/academics/academic-affairs/vp-office/academic-honesty-policies-and-procedures.php>

## Learning Support

**The Academic Support Center:** The Academic Support Center provides free peer tutoring for most core courses and some upper-division courses. It also offers time management and study skills workshops as well as other learning support services.

Call 333-7570 to make an appointment, or visit the website: <https://www.valdosta.edu/asc/>

**Odum Library** provides a variety of services to assist classroom instruction, including library instruction, course reserves, and interlibrary loan. Please see <https://www.valdosta.edu/academics/library/> for further information.

**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@valosta.edu](mailto:titleix@valosta.edu), 1208 N. Patterson St., Valdosta State University, Valdosta, Georgia 31608, 229-333-5463.

**Access 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](mailto:access@valdosta.edu).

### **Coronavirus Resources**

VSU cares about student success both on and offline, and a variety of resources are available to help students both academically and personally during the Fall 2020 semester.

One of the best resources is VSU's Coronavirus FAQ page located at <https://www.valdosta.edu/health-advisory/faq.php>. Information is available there about a variety of topics in VSU's return-to-campus plan. A website devoted to the health and wellness of VSU students can be seen at <https://www.valdosta.edu/administration/finance-admin/campus-wellness/student-resources.php>.

You can find information, including how you can access the Brightspace Pulse app that will allow you to view BlazeVIEW on your smartphone at <https://www.d2l.com/products/pulse/>. In BlazeVIEW, all VSU students have a course with guides for how to use tools in BlazeVIEW; search for "VSU BlazeVIEW Student Tutorial 2020."

**TENTATIVE LECTURE SCHEDULE:**

<b>Lecture</b>	<b>Date</b>	<b>Topic</b>
1	Aug 17	<b>Introduction to the Course</b>
2	Aug 19	<b>Introduction to Genetics</b>
3	Aug 24	<b>Mitosis, Meiosis and The Development of Gametes</b>
4	Aug 26	<b>Mitosis, Meiosis and The Development of Gametes</b>
5	Aug 31	<b>Chromosome Variation</b>
6	Sept 2	<b>Basic Principles of Heredity</b>
--	Sept 7	<b>LABOR DAY-NO CLASS</b>
7	Sept 9	<b>Basic Principles of Heredity</b>
8	Sept 14	<b>Genetic Pedigrees</b>
--	Sept 16	<b>Review Problem Homework</b>
--	Sept 21	<b>EXAM 1 online- Lecture 2-8</b>
9	Sept 23	<b>Extensions and Modifications of Basic Principles</b>
10	Sept 28	<b>Extensions and Modifications of Basic Principles</b>
11	Sept 30	<b>Extensions and Modifications of Basic Principles</b>
12	Oct 5	<b>Linkage Recombination and Eukaryotic Gene Mapping</b>
13	Oct 7	<b>Quantitative Genetics</b>
14	Oct 12	<b>Population and Evolutionary Genetics</b>
15	Oct 14	<b>Population and Evolutionary Genetics</b>
--	Oct 19	<b>Review Problem Homework</b>
--	Oct 21	<b>EXAM 2 online-Lecture 9-15</b>
16	Oct 26	<b>DNA: the Chemical Nature of the Gene DNA Replication</b>
17	Oct 28	<b>Transcription and RNA Processing</b>
18	Nov 2	<b>Translation</b>
19	Nov 4	<b>Control of Gene Expression in Prokaryotes</b>
20	Nov 9	<b>Control of Gene Expression in Eukaryotes</b>
21	Nov 11	<b>Cancer Genetics</b>
--	Nov 16	<b>Review Problem Homework</b>
--	Nov 18	<b>EXAM # 3 online- Lecture 16-21</b>
24	Nov 23	<b>Review for Final Exam-LAST F2F CLASS</b>
25	Nov 25	<b>THANKSGIVING</b>
26	Dec 10	<b>FINAL EXAM ONLINE 2:45 PM-4:45 PM (comprehensive)</b>