

**BIOL 4580(6580), Molecular Genetics
Summer Semester II 2022
BIOL 4580 (CRN# 52597), BIOL 6580 (CRN# 52598)
Credit hours: 4**

Before reading any more information, please jump to the last page and complete the task.

Instructor: Dr. Ansul Lokdarshi
Office: BC 2212
Email: alokdarshi@valdosta.edu

Office (Student) hours **Wednesday 3:00 PM- 5:00 PM in my office, BC2212**

Lecture (BC 1202)	Tuesday and Thursday	11:10 AM	2:00 PM
Lab (BC2071)	Tuesday and Thursday	2:30 PM	5:20 PM

Important points in the syllabus are in bold or highlighted in yellow or marked with red. Please pay special attention and make a note of these points.

Pre-requisites: BIOL 3200 or permission of instructor.

Course Description: The study of basic molecular mechanisms that govern gene expression and regulation, and introduction to latest gene editing technology, CRISPR-Cas9 system. The lecture will focus on using modern molecular genetics and biochemical techniques as a means to understanding and manipulating complex prokaryotic and eukaryotic genomes. The laboratory will involve hands-on experience in which the student will learn fundamental lab techniques and application of CRISPR-Cas9 technology in gene editing.

Recommended Text: No Book Required.

Suggested readings below.

Text: 1) Mark Ptashne. A Genetic Switch: Phage Lambda Revisited. 2004. 3rd Ed. Cold Spring Harbor Laboratory Press (ISBN # 0879697164)

2) Other options include Concepts of Genetics, 12th edition, *William S Klug, Michael Cummings, Charlotte A. Spencer, Michael A Palladino, Darrell Killia* (Chapter III, IV, Speci92 rem5()11(I)-8(e)11(tp)-4(c)9(hs)4(ng)9(der)-5(

These course outcomes support the VSU Biology Department Outcomes # 1, 3, & 4 and the University General Educational Outcomes # 4, 5 & 7 as listed in the VSU Undergraduate Catalogue (see below).

VSU Biology Department Objectives:

BO1. Develop and test hypotheses, collect and analyze data, and present the results and conclusions in both written and oral formats.

BO3. Demonstrate an understanding of the cellular basis of life.

BO4. Relate the structure and function of DNA/RNA to the development of form and function of the organism and to heredity.

VSU General Educational Outcomes:

GE4. Students will express themselves clearly, logically, and precisely in writing and in speaking, and they will demonstrate competence in reading and listening.

GE5. Students will demonstrate knowledge of scientific and mathematical principles and proficiency in laboratory practices.

GE7. Students will demonstrate the ability to analyze, to evaluate, and to make inferences from oral, written, and visual materials

Lab

Laboratory Manual: None; mainly handouts or laboratory protocols and papers. TBA

Attire: Lab aprons and face shields will be provided and must be worn during lab. **SANDALS, FLIP-FLOPS AND OTHER OPEN-TOED SHOES ARE NOT PERMITTED IN LAB. IF YOU ARRIVE IN FOR LABS SANDALS OR FLIP-FLOPS YOU WILL NOT BE ALLOWED ENTRY INTO THE LAB AND WILL BE MARKED AS ABSENT.**

Attendance: Attendance policy: **Attendance to both lecture and lab is required.** If you miss a lecture or lab I reserve the right to determine what constitutes an excused or unexcused absence. To name a couple of examples of unexcused absences, scheduled appointments or leaving town, except for University related activities (e.g. you are on a sports team or are presenting at a conference), do not constitute excused absences.

will be counted as unexcused.

Quizzes and in-class assignments will be given throughout the semester, which is why attendance is required. Generally, quizzes or in-class assignments in lecture cannot be made up if lecture is missed. If you miss the lecture and I approved your absence the total number of points possible to you will be reduced. If you miss quizzes and/or in-clas

Lab rules and regulations:

Bring a notebook to lab to write down your data. You will need this to complete your weekly lab report and submit that file in BV for grading. A final lab report will be built on these weekly lab reports.

Read the lab handouts ahead of time so that you have some idea of what will be going on in the lab.

Be on time for lab. Instructions, clarifications and changes in protocols will be given at the beginning of lab, and I will not repeat myself just because you are late.

No eating or drinking in the lab at any time. Some of the chemicals we will be using are toxic or mutagenic.

Clean up after yourself. Remove all labels/tape from the glassware, rinse and place in the tub by the sink.

You should read ahead of the schedule. So, when you come to class you can ask questions.

When studying, ask yourself how this information would be applied.

Come to office (student) hours and ask questions if there is material you do not understand.

Ask questions in class! This is graded and you can earn free points.

Grading: Your grade will depend on how well you do on the exams, quizzes, and lab report. Expect the following grading scale (based on the total number of points actually assigned):

Grade Calculation		Grade distribution	
Category	Possible weight	Letter	Percentage
Lecture Exam 1	20%	A	90-100%

Learning Support

- **Access Office:** 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 access@valdosta.edu.
- **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.v>

Learning contract | Dr. Ansul Lokdarshi

- 1) **I care** I teach because I want to contribute to your successful career. You must also promise to make the effort to rise to expectations worthy of your own future goals.
- 2) **Knowledge ownership**
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