COURSE TITLE: Genetics | CATALOG NUMBER: BIO262

INSTRUCTOR: Vladimir Jurukovski | SEMESTER: Fall 2016

www2.sunysuffolk.edu/jurukov

REQUIRED TEXTBOOKS

Publisher: McGraw Hill Education  

REQUIRED ONLINE COMPONENT

On-line assignments will be given at regular intervals before and after each topic. These are required and will contribute 10% of your final grade.  
http://connect.mheducation.com/class/v-jurukovski-fall-15

Lab: A three ring binder for handouts and others.  
A calculator  
Colored pencils are very useful.  
Graph Paper  
Graph paper is required and can be printed from these web sites (PDF reader is needed):  
www2.sunysuffolk.edu/jurukov/graphpaperB&W.pdf  
www2.sunysuffolk.edu/jurukov/graphpaperGreen.pdf

PREREQUISITES

BIO-132 or BIO-150 are prerequisite for this course.

OBJECTIVES OF THE COURSE

1. Introduce the different areas of the science of Genetics and how each of these areas relate to the biological world.

2. Diagram the cell cycle, mitosis, and meiosis. Explain how the movements of chromosomes during the cell cycle are related to the patterns of Mendelian inheritance. Explain the various mechanisms utilized to achieve recombination. Explain why recombination is important to evolution.

3. Use the principles of Mendelian genetics to explain experimental results and design experiments. Study the extensions of Mendelian Genetics.

5. Describe chromosomal aberrations and explain their role in gene expression, disease, and evolution. Describe the various mechanisms that may cause gene mutation. Explain how mutation affects protein structure and function.

6. Introduce the basic concepts of molecular genetics. Diagram the structure of DNA. Explain how this molecule encodes information and replicates. Trace the process of gene expression through transcription and translation.

7. Understand the basic concepts of regulation of gene expression in prokaryotes and eukaryotes.

8. Understand the basic concepts of population genetics. Use the Hardy-Weinberg Law to solve problems in population genetics and how natural selection change gene frequencies.

9. Understand the basic concepts of molecular evolution.

PROCEDURES FOR ACCOMPLISHING COURSE OBJECTIVES

1. Major concepts of biology, the important experiments leading to them, and the interpretation of their significance will be discussed. Your discussion is strongly encouraged.

2. You will perform laboratory experiments designed to introduce experimental techniques, data collection, and data analysis.

GENERAL INFORMATION

Welcome to BIO262. You will learn a great deal during this semester so you will be pleased with your accomplishment when you have completed the course. The information in this course outline is important to your success. Please read it carefully and keep it for future reference.

College level science courses require a significant commitment from you. You should attend all classes. In addition, you should plan to spend extensive study time outside of class. Your professors and Suffolk Community College stand ready to help you. Good luck!

OFFICE HOURS

Office hours are times that are available to you for help with your course work. I will be more than happy to work with you. My office hours are posted on my web site (www2.sunysuffolk.edu/jurukov). Please stop in during the announced times, or make appointments as soon as you suspect you need help. Problems are more easily solved when they first start.

ATTENDANCE

1. You are expected to attend every class session for which you are registered. You are responsible for all class material whether or not you were in attendance. The College defines excessive absence or lateness as more than the equivalent of one week of class meetings.
during the semester. Excessive absence or lateness may result in failure in the course or your removal from the roster.

2. If you decide to drop a course, you must do so officially to preserve your right to the grade of W. If you stop attending a class, that action does not constitute a formal drop, and I may assign you a grade of F.

3. Laboratory attendance is mandatory. If you miss more than one laboratory, you may be dropped from the course with a grade of either W or F (see rule #2).

**STUDENT REQUIREMENTS**

1. **Read laboratory and lecture assignments in advance** and consult the outlines for topics yet to come.

2. Submit on time all online **pre- and post-lecture assignments**.

3. Submit laboratory reports in proper form and all other written work that is assigned to you on time, late work will not be accepted.

4. Take all lecture and laboratory examinations. Three lecture exams will be given during the course of the semester. A cumulative final exam will be given at the end of the semester and must be taken to complete the course. Two laboratory exams will be given; one at mid-term and one at the end. Both exams must be taken.

**STUDENT RESPONSIBILITIES**

You are expected to attend all classes. Please arrive on time and stay until the end. Careful notes should be taken in all classes and kept in an organized sequence. Thorough study of notes, textbook, and laboratory exercises is required. Group study is often a valuable supplement to individual study. Please come in during office hours if you have any trouble mastering some portion of the course work and if you would like any extra information on topics covered. The SCCC learning centers, the library, and the biology tutoring center are additional sources of help that are available to you. Please make use of all these resources. Your success is my goal!

**COURSE COLLEGIALLY:**

In order to allow the pursuit of knowledge to its fullest, without unnecessary distractions and to maintain common courtesy to others, every student

1. should refrain from bringing food and drink to the classroom for the purpose of consuming them during the lecture and/or laboratory as College policy forbids doing so, and
2. should refrain from bringing cellular phones to the classroom, unless they have been turned OFF. In the event that cellular phone interrupts the class proceedings, the student should **immediately** leave the room. Students that text and use cell phones during lecture and laboratory sessions will be asked to leave the room and not to return which will automatically be registered as absence.

**COMUNICATION:**

You can contact me via e-mail regarding subjects related to the course and for academic advice. In such cases you **must use your College e-mail account**. E-mails from other accounts (yahoo, gmail, aol, optoline, etc) will not be answered. Check your College account frequently since
important announcements and messages will be sent to those e-mail addresses. Grade requests after the final examination will be answered but the expediency is not guaranteed. Any messages that ask for higher grade and try to negotiate grades will not be answered. Any inappropriate e-mails will be forwarded to the appropriate institution at the College. Lecture notes and related materials used in class will be available on www2.sunysuffolk.edu/jurukov. My e-mail address is: jurukov@sunysuffolk.edu

GRADING PRACTICES

You will receive one grade for BIO262. 75% of this grade is determined by your achievement in lecture and 25% is determined by your performance in laboratory. The online assignments will contribute 10% toward your final grade and the clicker questions will contribute 5%. Detailed breakdown of your laboratory grade will be discussed in the lab.

To: Vladimirs Jurukovski (your instructor’s name)

From: (print your name)

Date: __________________________

I have read the OUTLINE, have had an opportunity to ask questions about them, and fully understand them.

Your Signature __________________________
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