Syllabus
Semester: Spring 2019
Course Name: BIO130.003 Principles of Cell and Molecular Biology
Hall – S139, 9:30-10:45 TR
Office Hours: S236; TR 11:00-12:00, W 14:00-16:00, 19:00-20:00 or by appointment
Dr. Alexandra Martynova-Van Kley
Professor, Department of BIOLOGY
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Phone: 468-2569

WELCOME TO BIO130: This course is designed to introduce you to the essential principles, processes and mechanisms of molecular and cell biology. Course objectives: to develop a basic understanding of the mechanisms of life on a cell level; to gain an understanding how cells and organisms interrelate.

ATTENDANCE: You are expected to attend all lecture classes. It is vital that you read the chapter text prior to class as this will permit you to pose questions more efficiently. If you miss a lecture class for unavoidable reasons, make sure you get the notes from another student and visit my office to make arrangement for a make-up work. Missing an exam will be permitted only by prior arrangement.


GRADING CRITERIA:
Lecture Exams (all together) - 100 pts
Attendance + participation/discussions + course evaluation + lecture notes - Additional pts TOTAL - 100 pts

NO GRADE DISCUSSION over an e-mail.

SCANTRON SHEETS: (form no. 30423): 6 total per semester.

SI: Nicholas Steele, e-mail: steeleprime1013@gmail.com

CELL PHONES, LAPTOPS AND OTHER ELECTRONIC DEVICES: All electronic devices MUST be turned off and PACKED AWAY during the lecture. Students using electronic devices during class will lose up to 10 points of their final grade. Any use of an electronic device during a test will be considered cheating.

CLASS WEB-PAGE: http://martynova-vankley.com/bio130/
to open slides you need: user name: student
password: biotech
SCHEDULE (tentative):

01/22  Meeting with the class
01/24  History of cell. History of biology  link1
01/29  The chemistry of the cell  130ch1_2
01/31  The macromolecules of the cell  130ch3
02/05  The macromolecules of the cell  130ch3_
02/07  Exam 1
02/12  Cell & organelles  130ch4
02/14  Cell structure & function  130ch4_
02/19  Enzymes and bioenergetics  130ch5
02/21  Membranes structure and function  130ch7
02/26  Exam 2
02/28  Transport across membranes  130ch8
03/05  Glycolysis. Fermentation  130ch9
03/07  Aerobic respiration  130ch10
03/12  Photosynthesis  130ch11
03/14  Exam 3
03/19  Break
03/21  Break
03/26  DNA - cellular basis of Information. 130ch16
03/28  DNA replication  130ch17
04/02  DNA repair  130ch17_
04/04  DNA tools  130ch21na
04/09  Review  link2
04/11  Exam 4
04/16  Gene expression:transcription  130ch18
04/18  Easter
04/23  Gene expression:translation  130ch19
04/25  Review
04/30  Exam 5
05/02  Protein processing  130ch19_
05/07  Expression control  130ch20
05/09  Genetic recombination  130ch25
05/16  Final (Comprehensive) at 8:00  link3

*Choose you **SEAT** today and **KEEP** it
PROGRAM LEARNING OUTCOMES: Each of the student learning outcomes listed above address the Biology Department Program Learning Outcomes as follows:

#1 Demonstrate a good knowledge base in biological concepts and be able to integrate knowledge with critical thinking skills to become problem solvers. Knowledge base will include: levels of complexity (molecular/cellular through population/communities/ecosystems); biological principles and processes.

#6 Career building demonstrate preparation for future career and educational goals utilizing the knowledge and training during their academic program by: awareness of personal competencies (strengths and weaknesses) and an understanding of professional and ethical behavior.

STUDENT LEARNING OUTCOMES (Course Competencies): Students who successfully complete Principles of Cell and Molecular Biology will demonstrate:

- The ability, for animal cells, to recognize and identify the function(s) of the following: centrioles, chromatin, Golgi apparatus, lysosome, microfilaments, microtubules, mitochondrion, nucleus, peroxisome, plasma membrane, rough and smooth endoplasmic reticulum, and ribosomes.
- The ability, for plant cells, to recognize and identify the function(s) of the following: cell wall, chloroplast, and central vacuole.
- An understanding of the ability of enzymes to facilitate chemical reactions. Explain how catalysts, including enzymes, affect and are affected by the chemical reactions in which they participate.
- An understanding of the biochemical processes of photosynthesis, glycolysis, citric acid cycle, and oxidative phosphorylation. Define cellular respiration and identify the cellular locations of the various stages of cellular respiration. Distinguish between the light reactions and the Calvin cycle of photosynthesis.
- An understanding of how cells grow and divide. Describe the major events of each of the stages of the cell cycle (Interphase, G1, G2, S, Mitosis, Prophase, Prometaphase, Metaphase, Anaphase, Telophase, Mitotic Phase and Cytokinesis).
- Explain how information flows from gene to protein. Describe the major events including transcription, translation and protein sorting. Explain the function of mRNA and tRNA. Describe how gene expression can be affected at various levels: DNA packing/unpacking and chemical modification.

ACADEMIC HONESTY: All daily scored questions can be answered after discussion within your group, but you must submit your answer individually with your own clicker only. Use of any other person’s clicker is considered cheating. All exam work submitted for grading must be exclusively your own. Any dishonesty or cheating may result in a final score of zero (“F”) for the course. SFA Policy A-9.1 is summarized as: “Academic integrity is a responsibility of all university faculty and students. Faculty members promote academic integrity in multiple ways including instruction on the components of academic honesty, as well as abiding by university policy on penalties for cheating and plagiarism. Definition of Academic Dishonesty: Academic dishonesty includes both cheating and plagiarism. Cheating includes but is not limited to (1) using or attempting to use unauthorized materials to aid in achieving a better grade on a component of a class; (2) the falsification or invention of any information, including citations, on an assigned exercise; and/or (3) helping or attempting to help another in an act of cheating or plagiarism. Plagiarism is presenting the words or ideas of another person as if they were your own. Examples of plagiarism are (1) submitting an assignment as if it were one’s own work when, in fact, it is at least partly the work of another; (2) submitting a work that has been purchased or otherwise obtained from an Internet source or another source; and (3) incorporating the words or ideas of an author into one’s paper without giving the author due credit.” ([http://www.sfasu.edu/policies/academic_integrity.asp](http://www.sfasu.edu/policies/academic_integrity.asp))

STUDENTS WITH DISABILITIES: To obtain disability related accommodations, alternate formats and/or auxiliary aids, students with disabilities must contact the Office of Disability Services (ODS), Human Services Building, and Room 325, 468–3004 / 468–1004 (TDD) as early as possible in the semester. Once verified, ODS will notify the course instructor and outline the accommodation and/or auxiliary aids to be provided. Failure to request services in a timely manner may delay your accommodations. For additional information, go to [http://www.sfasu.edu/disabilityservices/](http://www.sfasu.edu/disabilityservices/).
CLASSROOM EXPECTATIONS: Standard classroom decorum is expected. Please do not carry on a separate conversation that might be distracting to other students. If you have a cell phone or pager, please make sure it is either turned off or set to silent operation. Behavior that interferes with the learning environment will not be tolerated. If necessary, students violating these standards will be removed from the classroom. Additionally, please arrive in class a bit early as we will be starting promptly on time.

WITHHELD GRADES, SEMESTER GRADES POLICY (SFA POLICY A–54). Ordinarily, at the discretion of the instructor of record and with the approval of the academic chair/director, a grade of WH will be assigned only if the student cannot complete the course work because of unavoidable circumstances. Students must complete the work within one calendar year from the end of the semester in which they receive a WH, or the grade automatically becomes an F. If students register for the same course in future terms the WH will automatically become an F and will be counted as a repeated course for the purpose of computing the grade point average. The circumstances precipitating the request must have occurred after the last day in which a student could withdraw from a course. Students requesting a WH must be passing the course with a minimum projected grade of C.