

Biology 1A

Dr. Leslie Blackie Office B200

Lecture MW 9 – 10:15 Lab 10:30-1:20 B201

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Course Description: Biology 1A is the first semester of a 2 semester series designed for students who are majoring in the Biological or health sciences. College level chemistry (Chem 1A) is a prerequisite. This course is a general overview of the many topics in biology. It will serve as a base for learning more about the specific areas of biology in other courses.

Discussion Topics: (both semesters are listed here)

Bio 1A

Cell Biology and biochemistry (Ch 1-12)

DNA and Genetics (Ch 13-21)

Animals, form and function (Ch 40-51)

Bio 1B

Biodiversity (Ch 26-34)

Plants form & function (Ch 35-39)

Evolution (Ch 22-25)

Ecology (Ch 52-56)

Materials required:

Textbook: Biology by Campbell, 9th edition

Lab Book: on Moodle site for BIOL 1A – you will need to print this out

“The Double Helix, A personal Viewpoint” by J.D. Watson, published in 1968

Scantrons for Exam # 1 and Exam # 3

Format and General Information

Lectures will be the first hour and 15 minutes of the class. Plan to be in your seat and ready to take notes at that time. You should read the appropriate chapters of the text prior to the exams. Many students find it helpful to read the chapters before the lectures. If it is not talked about in lecture, you are not required to learn it. You do not need to bring your textbook to class.

Labs will begin after the 15 minute break. You must print out the lab with enough time to read it over before class. After the initial explanation of the lab activities, you will work individually or in groups to complete the assignment. You are expected to budget your time to complete the assignment and you can decide when to take your breaks. If you finish your lab assignment early, you are encouraged to use the time for reviewing, asking questions from the lecture topics, or completing written work. Some days we may finish early, but you should expect to stay for the entire lab period.

Biology is a complex and interconnected subject. Sometimes questions in lecture will lead us to explore topics that do not seem directly related to the subject matter at hand, but are important to explore. Sometimes topics cannot be fully covered until we learn more and can connect things we learned earlier in the semester to things we learn later in the semester

Attendance:

You are expected to attend every class, arrive on time, and stay until the end of class. You are required to sign-in on the sheet at the front of the room for the labs. If you have not done the work you are not allowed to turn in a lab report and get credit for the work done that day.

Assessment (800 points):

Exams (400 points)

Midterm exams: (300) There will be 4 exams worth 100 points each. Exams will cover material for lecture and lab and are closed book. You must be able to recognize and define the terms learned in class, synthesize information from the lecture and answer T/F, multiple choice, fill in or short essay questions. Exams 1 and 3 will require scantrons and a number 2 pencil, and Exams 2 and 4 will have lab practicals as well as a written part to the exam. Lab Practical will form part of the lecture exam grade on Exams 2 and 4. You must work quickly (two minutes per station) to identify and correctly answer questions about microscope slides, figures or models. Only 1 student can be at a station at a time. You will move from station to station at the direction of the instructor. The lowest midterm exam score will be dropped.

During the exam, if you feel a question is not clear, you may ask me to clarify. Cheating will result in a zero for the exam, possible notification of the Dean and/or failure of the course and suspension from the school. Do NOT talk during exams for any reason, nor check your cell phone. I do not give makeup exams unless you contact me ahead of time.

Cumulative Final (100 points)

There will be a cumulative final given during finals week. This will cover material over the whole semester.

Lab Reports (200 points)

Lab reports will be turned in throughout the semester involving sketches, answers to questions, and observations and data analysis of results obtained in class. Late lab reports will be accepted (with a penalty) only until the Exam covering that material is given. Lab reports are due at the beginning of the class or they will be considered late. If you look down a microscope, you are expected to provide a sketch of what you see in the lab report. The expected information to be included in the lab report will be explained at the beginning of class, and also written on the board.

Informal Reports: You are required to turn in 10 informal reports throughout the semester. They are graded at 10, 7 or 5 points. These will include sketches and/or questions from the lab manual. Informal reports will be due at the next lab period. You are expected to turn in at least 2 informal labs per each exam section.

Formal Reports: You are required to turn in 4 formal reports throughout the semester. There is a grading rubric to include at the back of your lab report. The expected lab report format includes 4 sections of Purpose, Materials and Methods, Results and Discussion. Formal lab reports are noted on the syllabus with an asterisk (*). They are due 1 week after the lab was completed.

Quizzes and other papers (100 pts)

Syllabus quiz (moodle) to be completed by the end of the first week of class (10 pts)

Microscope quiz (moodle) to be completed before we start the microscope labs (10 pts)

Field Trip Report (20 points)

There will be a field trip report due in the form of a newspaper article reporting the excursion and it will be graded at 20, 15 or 10 points. It will be due 1 week after the field trip.

Seminar Paper (20 points)

There will be a seminar paper due discussing “The Double Helix”. The paper will be graded at 20,15, or 10 points. Read the guidelines for the seminar paper. The paper will be due at the end of the class because you will use the paper and the quotes to help facilitate the discussion of the book. You must be present for the discussion to turn in your paper.

Genetic Problem Set (40 points)

A genetics problem set that requires you to solve genetics problems and learn concepts given in lecture will be turned in and graded up to 50 points. This is a challenging assignment that is similar to a take home test. No late genetics problem sets will be accepted.

Extra Credit: There will be opportunities for extra credit throughout the semester.

Grading Scale

Your grade is based on points. You have a “Keep Track of your Progress” sheet to be able to calculate your grade at any time throughout the semester. You are encouraged to check your calculations with my records.

90 – 100 %	A
80 – 89 %	B
65 – 79 %	C
55 – 64 %	D
below 54 %	F

Asking Questions:

If you have a question while I am lecturing, please feel free to raise your hand. I encourage questions about the material – remember that if you are confused, chances are other students are also confused! If you have a question that is not related to the topic we are working on, or is not appropriate for the lecture period, please see me during the lab period or office hours.

Classroom expectations

- 1) I expect you to come to class on time. Punctuality is important and coming to the class late disrupts the class for your fellow students and instructor. Coming late to labs means you have missed the instructions for the lab and may not be allowed to join in. If you will be routinely 1-2 minutes late due to coming from another class, another campus or job, or due to the transportation schedule, please let me know.
- 2) You are responsible for knowing all the information in this course information and syllabus. Changes to the syllabus (due to rescheduling for field trips, availability of lab supplies, or unexpected situations that arise during the semester) will be announced and written on the board. You are expected to note those changes down on your own syllabus.
- 3) You are expected to keep track of your progress and how many of the required assignments you have turned in
- 4) You must turn off the sound for cell phones/pagers etc while in the classroom. No electronic dictionaries are allowed.
- 5) You are responsible for dropping yourself from the course. Just not showing up does not guarantee that I will drop you from the course.
- 6) Please see me if you have a problem that will affect your performance in class. I cannot help to find solutions if I do not know the problem.

Student Learning Outcomes Bio 1A

Define the functions of organelles and explain cellular processing including respiration, photosynthesis, mitosis, meiosis and transcription/translation in class discussion and on exams.

Describe the chemical makeup of macromolecules and their importance in the structure and function of the cell.

Describe the details and structure and function of the animal body systems discussed in lecture, preparing to defend this information in the context of evolution (during Bio 1B).

Explain the importance of DNA as the genetic info and define how it directs the functions of the cell. Integrate knowledge of DNA with the concepts of genetics and biotechnology. Appraise ethical issues involved with the study of genetics, biotechnology and medicine and express this reasoning in classroom discussions.

Synthesize information, think independently and reason through new material in a way that not only reflects facts learned about a particular topic, but also an understanding of cell and molecular biology, and express this reasoning in discussions and on exams.

Apply the scientific method to laboratory exercises as conducted during lab time and defend verbally what steps of procedures have been done following laboratory protocols.

Write clear, well organized lab reports. Analyze the results of laboratory experiments and evaluate sources of experimental error.