

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, 11th edition

Lab Book: on Canvas 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

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.

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..

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

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.

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

Accessibility:

It is our goal to make our courses as accessible as possible to students all of our students. We encourage you to chat with me by the second week of the course regarding any accommodations that will improve your experience in this course. You can also contact the Disability Services and Programs for Students at 464-3428 for assistance.

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 Background/Purpose including Hypothesis, 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. Formal lab reports are up to 25 points. 1 formal lab per exam section. Formal labs will be turned in to Canvas.

PRELABS (25)For labs that are possible formal lab writeups you will also be required to do a prelab and have an openbook prelab quiz. The quizzes are intended to assess your level of preparation for the experiment and will ask questions which should be able to be found in the prelab.

Prelab Sections a) Objective -Describe the purpose of the experiment - what concepts are we exploring, in two or three sentences. b) Table of reagents -what solutions and indicators are we using c) Procedure outline (a brief outline of the steps in the procedure) d) Data collection summary - if data tables are not in the procedure you need to make up your own. If data tables have been provided then make statements of what observations you will be making. Summarize what data you are collecting e) Data analysis prethought - how might you present that data later? What kinds of data and notes about observations do you need?

Other papers (100 pts)

Field Trip Report (25 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 25, 20 or 15 points. It will be due 1 week after the field trip and turned into Canvas.

Seminar Paper (25 points)

There will be a seminar paper due discussing "The Double Helix". The paper will be graded at 25, 20, or 15 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 (50 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.

On Canvas (60 pts) To build community in the classroom and comfort working online

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

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

Forums on writing (40 points)

A substantive post in the forum (at least 100 words) reflecting on the lab report or reaching out for discussion on a section of the report - one report per exam section (5 points each) and 2 replies to other classmates posts per exam section (5 points each)

Some characteristics I consider to be part of excellent discussion contributions are outlined below. Submit initial post(s) well before the due date, and subsequent responses to the posts of other learners on time. The goal is to have a dynamic discussion around the topic.

- Posts and responses should be thorough and thoughtful. Just posting an "I agree" or "Good ideas" will not be considered adequate. Support statements with examples, experiences, or references. Be brief — keep each post and response to one or two short paragraphs. Keep in mind that fellow learners will be reading and may be responding to you, too.
- When relevant, add to the discussion by including prior knowledge, experiences, references, resources, etc. (giving credit when appropriate).
- Contributions to the discussions (posts and responses) should be complete and relatively free of grammatical or structural errors.

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

Participation – 15 points Each person is expected to attend class regularly, to be prompt, and to be well prepared. This includes attending lecture, arriving on time, to have pre-read material and being prepared to take notes at the beginning of class. You are graded on not just showing up, but participating and being prepared. In lab, this includes cleaning up your lab area before you leave the classroom, putting your microscope away correctly, pushing in your lab stool and being respectful of your fellow students, the instructor and the class. You will be given points dependent upon how well you achieve these goals.

Everyone starts with 70% of participation points and those points will go up or down depending on you! . Using your phone or laptop during lecture for uses other than taking notes, not having your lab available ahead of time, not paying attention to due dates provided will lead to a decrease in your points. 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

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. You are to turn this page in twice

90 – 100 %	A	(720-800 points)
80 – 89 %	B	(640-719 points)
70-79 %	C	(560 – 639 points)
60-69 %	D	(480-559 points)
below 59 %	F	

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. 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.

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.

If you have any concerns about the class, please feel free to discuss them with me
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MONDAY	TUES	WEDNESDAY	THURS	FRIDAY	SATURDAY
Jan 13	Jan 14	Jan 15	Jan 16	Jan 17	Jan 18
		PROFESSIONAL DAY	PROFES	PROFESSIONAL DAY	
Jan 20	Jan 21	Jan 22	Jan 23	Jan 24	Jan 25
		Lec Intro, Lab Process Science			
Holiday		Lab Process of Science		Syllabus Quiz Due	
Jan 27	Jan 28	Jan 29	Jan 30	Jan 31	Feb 1
lec Ch 2 Chem, Ch 3 Water Lab Properties of H2O		Lec Ch 3, Ch 4 Carbon Lab Acids & Bases			Feb 4: Last day to ac drop w/o W; Census
Feb 3	Feb 4	Feb 5	Feb 6	Feb 7	Feb 8
Lec Ch5 macromolecules Lab Properties of Enzymes part 1		Lec Ch 5 macromolecules cont Lab Enzymes cont*		Last day to file PASS/NO	
Feb 10	Feb 11	Feb 12	Feb 13	Feb 14	Feb 15
Lec Ch 8 Metabolism Lab Macromolecules*		Lec Ch 6 Cells Exam # 1		Holiday	
Feb 17	Feb 18	Feb 19	Feb 20	Feb 21	Feb 22
		Lec Cells and Tissues			
Holiday		Lab Plant Cells Micro quiz due			
Feb 24	Feb 25	Feb 26	Feb 27	Feb 28	Feb 29
Lec Ch 7 Membrane Structure Lab Animal Cells		Lec Ch 9 Cell respiration Lab Membrane Stress *			
Mar 2	Mar 3	Mar 4	Mar 5	Mar 6	Mar 7
Lec Ch 10 Photosynthesis Lab Respiration and Fermentation		Lec Ch 11 Cell communication Lab Photosynthesis			
Mar 9	Mar 10	Mar 11	Mar 12	Mar 13	Mar 14
Lec Ch 12 Mitosis Lab Mitosis		Lec Ch 13 Meiosis Exam # 2			
Mar 16	Mar 17	Mar 18	Mar 19	Mar 20	Mar 21
Lec Ch 14 Genetics Lab Meiosis		Lec Ch 14,15 Lab Exploring Genetics	Prof Dev Day	Last day to file for AA/AS	
Mar 23	Mar 24	Mar 25	Mar 26	Mar 27	Mar 28
Lec Ch 15 More Genetics Lab Gen Problem Set #		Lec Ch 16 DNA Lab Double Helix Movie #			
Mar 30	Mar 31	Apr 1	Apr 2	Apr 3	Apr 4
Lec Ch 20 DNA Technology Lab DNA		Lec Ch 19 Viruses Lab DNA & protein synthesis			
4/6	4/7	4/8	4/9	4/10	
Lec Ch 20, Exam #3		Lec Ch 19 Viruses Lab Biotech Dilemmas			
Apr 13	Apr 14	Apr 15	Apr 16	Apr 17	Apr 18
Spring Break		Spring Break			
Apr 20	Apr 21	Apr 22	Apr 23	Apr 24	Apr 25
Lec Ch 20 DNA Technology Lab Biotechnology I		Ch 43 Immune Lab Biotechnology I		Attend. Verif. Day Last day to drop with W	
Apr 27	Apr 28	Apr 29	Apr 30	May 1	May 2
Lec Ch 43 Lab Field Trip UCB Microscopes		Lec 46 Reproduction Lab Antibody&Antigens*			
May 4	May 5	May 6	May 7	May 8	May 9
Lec Ch 46 Lab Animal Reproduction		Lec Ch 42 Circulatory Lab Circulatory			
May 11	May 12	May 13	May 14	May 15	May 16
Lec Ch 42 Lab Review		Lec Seminar Discussion Exam # 4		Malcolm X Holiday	
May 18	May 19	May 20	May 21	May 22	May 23
Cumulative Final 9am-12 noon Finals	Finals	Finals	Finals	Finals	
Formal labs (*) due 1 week after lab compl		Informal labs due next Lab period		Lab (#) not turned in	
Genetics Problem set due 3/25		Seminar Paper "Double helix" due 5/13		Field Trip report Due 5/13	
Syllabus Quiz due 1/24		Microscope Quiz Due 2/19		Spring Break 4/13-4/18	