SYLLABUS
MCB 181L Introduction to Biology I Laboratory
Spring II 2020: March 16th – May 6th

Instructor Information

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Catalog Description

Laboratory exercises presenting techniques and fundamental principles of modern biology. Designed to complement the information concurrently presented in 181R.

Course Description

MCB 181L online brings a biology laboratory to your home through a combination of laboratory exercises using a biology lab kit and case studies that will challenge you to analyze real-world biology data. The labs and cases studies in this laboratory have been designed to teach the process of science while also reinforcing key concepts you need to understand molecular and cellular biology.

Course Delivery

This section is a fully online course.

Course prerequisites or co-requisites

This course is an introductory-level laboratory experience for biological-science majors and those in related disciplines (pre-health professions). Although this is a separate 1-unit course from the lecture, **success in MCB181 L requires either prior completion or co-enrollment of the lecture course, MCB181R.**

Although it is not a formal prerequisite, I will assume that students have a working understanding of material addressed in an introductory chemistry course. If you have never completed a chemistry course, I urge you to consult your academic advisor to

discuss the option of waiting to take MCB 181L until you have completed at least one semester of chemistry.

Students who are concerned with either the biology or chemistry course pre-requisites are strongly encouraged to contact Dr. Rezende (lrezende@email.arizona.edu) to discuss your background in science courses and determine if it is adequate to support your success in MCB181L.

Course Time Commitment and Online Attendance
MCB181L is an accelerated 1-unit semester-long laboratory course offered over 7 weeks. As University policy defines one unit of credit as **at least 45 hours** combined in-class and out of class work, you will be expected to put in **at least 6-8 hours per week.** Students concerned with this time commitment should contact the instructor as soon as possible.

The course is organized into seven one-week modules. MCB 181L is what is known as a "guided" online course, and it provides structure so you will not get too far behind. **You will not be working at your own pace.** Instead, every student enrolled in the course will be in the same unit at the same time. Discussion of the course material is a critical component of this online course, so we need to go through this together. Extended absences are not allowed except if you have a University- recognized excused absence **and have contacted the instructor beforehand. Not checking into the course over a one-week period without contacting the instructor will be considered an unexcused absence and any work due over that time cannot be made up.**

Course Objectives and Expected Outcomes
Upon successful completion of the MCB181L, you will be able to:

Upon successful completion of the MCB181R, you will be able to:	**Which aligns with MCB program outcome*:**
Use computer representations of molecules to understand inter- and intra-molecular interactions.	Demonstrate understanding of the molecular and cellular mechanisms that govern life and apply that understanding to novel scenarios.
Distinguish between a “guess,” a hypothesis, and a scientific theory	Apply analytical thinking to biological problems.
Generate hypotheses, design experiments to test the hypotheses, and make predictions based biological models.	Apply analytical thinking to biological problems.

Design appropriate controls for specific experiments.	Apply analytical thinking to biological problems.
Use graphs and tables to appropriately represent scientific data.	Apply analytical thinking to biological problems.
Defend conclusions and generate consensus understanding using scientific data.	Apply analytical thinking to biological problems
Evaluate the validity of various published sources of scientific information.	Evaluate the reliability of sources of information about biology.

*MCB181R is a foundation course for many majors beyond MCB.

Required Materials

Reading: There is no textbook or published lab manual for this course. All readings and laboratory instruction will be posted to the course D2L site.

Lab Kit (required): We will be using a custom lab kit from Carolina Biological Supply Distance Learning. You may purchase a code for the kit through the UA bookstore or directly from Carolina Biological Supply here. **The cost is about $130** including shipping if you order direct from Carolina, **$170** if you order from the bookstore. Codes that can be redeemed online for a kit can be purchased from the UA bookstore. You will need your kit beginning the week of **March 23rd.**

Lab Simulations (required): For more advanced techniques, we will be using simulations from Labster. Access may be purchased directly from Labster for $50 here or through from the bookstore (~**$70**). You will need the access to Labster beginning **March 16th.**

Course Website and Electronic Communications Policies

All course materials are available on the course website, http://www.d2l.arizona.edu. **To access the class website, you must be enrolled as a student in this section of the course**.

- **You should check the D2L site daily for announcements regarding the class, shown on the class home page.**
- D2L provides a convenient way for us to get in touch with you by email, and I will use email if I need to contact you**. D2L sends email to your "@email.arizona.edu" address. If you do not check this email account, please forward your UA email to the account you do check regularly.** I will not email you with routine course announcements, but only if there are significant, time-sensitive issues that need to be addressed.

- Please note that it is considered a violation of academic integrity for students to use the email function of D2L for their personal gain. For example, if you have posted your class notes at a third-party site, you may not use D2L email as a way to advertise this to your fellow students. Furthermore, be advised that it is a violation of copyright to distribute course materials in this way.
- The D2L gradebook will be the official list of your scores for all work in the class.
- **It is your responsibility to check your grades frequently to ensure that the scores recorded in D2L are correct.**

Contacting the Instructor

- **Course-related questions should be asked in the Virtual Office in D2L**. Examples of this type of question might include:
    - course logistics such as "When is the lab reports due?"
    - issues with course components such as "The link to the video in week two isn't working,"
    - issues with lab technique such as "I am having trouble setting up the dialysis tubing…"
    - questions on course content such as "Is rubbing alcohol a polar or nonpolar solvent?"

  by posting these questions to the virtual office the entire class benefits from the question and answer (just as would occur in a face-to-face lab).
- **If you have questions you wish to ask privately** (for example, something about your grade, or if you would like to schedule an office hour), the best way to contact me is email lrezende@email.arizona.edu
- **I make every effort to respond to all emails within 24 hours during the week, or 48 hours over the weekend.** Please understand that just like you, I have other responsibilities besides this class so my response may not be immediate. **If you have emailed me and haven't gotten a response within 24 hours on Monday-Friday, please contact me again!**

Grading Scale and Grade Policies

Your course grade will be determined by the following criteria according to the points earned on the items below:

Gradable Item	Points Each	Total Points
Pre-lab Lecture Participation (8 total, drop lowest score)	10	70
Discussions (8 total, drop lowest score)	20	140
Lab Reports and Activities (14 total, drop the lowest score)	50	650
Weekly Quizzes (7 total, drop lowest score)	20	120
Final Course Reflection	20	20
		1,000

Your final grade will be based on the total points you earn over the semester, with minimum grade cutoffs as follows:

Grade	Points
A	900-1000
B	800-899
C	700-799
D	600-699
F	500-599

All students who earn the minimum number of points or more will earn the corresponding grade. Point totals will be rounded to the nearest whole point. In general, grades are not curved.

Incompletes and Withdrawals
A grade of Incomplete (I) will only be given at the end of the term in the case of an emergency when a minor portion of the coursework cannot be completed. The student must contact the instructor before the end of the semester to agree on an incomplete grade contract using the Report of an Incomplete forms as described in the University of Arizona Course Catalog.

Requests for withdrawals must be made in accordance with university policies. The last day to withdraw without receiving a grade of W is **March 22nd,** after this date all students withdrawing from the course will receive a grade of W. The last day to withdraw through UAccess is **April 17th.** Dates are set by the university calendar and cannot be changed by the instructor.

Gradable Items
Pre-lab Lecture Participation (10 points each, drop the lowest score): Each week, I will give a brief pre-lab lecture that covers the both biological concepts and experimental details for that week's lab. This course uses Playposit, which allows questions to be integrated into the lecture. Your grade on the pre-lab is based on participation- please be sure to complete the last question of the lecture to receive credit.

Discussions (20 points each, drop the lowest score): Each week, we will have a discussion that covers **both** the lab you will be doing that week **and** data from the previous week's lab. You will be assigned a discussion group that you will stay in throughout the semester. You must have a substantial response to one peer to receive full credit for the discussion. In addition, in week one we will have a class wide "Introduce Yourself" discussion.

Lab Reports and Activities (50 points each, drop the lowest score): Each week you will complete 2 labs or activities (wet labs from the kit, virtual labs from Labster, case studies,

or other activities). For each, there will be a lab report, worksheet, or online assessment. Directions for each will be on D2L.

Weekly Quizzes (120 points total): Each week, you will complete a quiz over that week's labs and activities. You may take the quiz twice and your highest score will count.

Final Reflections (20 points): At the end of the course, you will fill out a reflection template that covers your learning in the course. Your grade will be based on the percentage of questions you complete.

Grade Appeals
If you believe that an error has been made in grading, you must contact Dr. Rezende **within one week** after the scores are posted. Turning in a re-grade request does not guarantee that you will receive more points, and your entire assignment or exam will be graded again.

Extra Credit
From time-to-time small number of extra-credit points may be available to students for work that goes beyond the normal requirements of the class. Dr. Rezende will announce when these are available and at all times the opportunity will be available to the entire class. ***Please do not contact Dr. Rezende requesting an extra credit assignment.***

Late Work
Late assignments will be accepted up to **two (2) days after** the due date and will incur a **10% per day point penalty** as follows:

- up to 24 hours late- 10% of the total possible points will be deducted from your score
- up to 48 hours late- 20% of the total possible points will be deducted from your score

Assignments that are more than 2 days late will receive a score of 0. For each class of gradable item, the lowest score will be dropped.

Discussion Policies
The course is organized into 7 one-week modules. MCB 181L is what is known as a "guided" online course, and it provides structure so you will not get too far behind. **You will not be working at your own pace.** Instead, every student enrolled in the course will be in the same unit at the same time. Discussion of the course material is a critical component of this online course, so we need to go through this together.

Participation is critical to your success and is a requirement of the course. You will be interacting with both online and offline materials, other students, and your instructor. Be sure you thoroughly read the requirements for all assignments, and if you have questions, please ask sooner rather than later.

As there is no "face time," online courses depend on interactions amongst the class through asynchronous discussion threads and between the instructor and the student through the completion of assignments. **Therefore, it is critical that you actively participate in all discussions and voice thread activities, as well as turn in your assignments on time**. Responses should have more depth than "I agree."

Syllabus, Schedule, and Assignment Changes
The information contained in the course syllabus, other than the grade and absence policies, may be subject to change.

Tentative Course Schedule

Week	Activities
Week 1: March 16th – March 22nd	• Introduction to online labs • **Activity:** Experimental Design Simulation • **Activity:** Microscopy Simulation
Week 2: March 23rd – March 29th	• **Laboratory:** Experimental Design Lab • **Activity:** Meiosis Simulation
Week 3: March 30th - April 5th	• **Laboratory:** Chemistry of Life • **Activity**: Protein Synthesis Simulation
Week 4: April 6th -April 12th	• **Laboratory:** Biological Molecules and Enzymes • **Activity:** Protein Denaturation Simulation
Week 5: April 13th – April 19th	• **Laboratory:** Eukaryotes, Prokaryotes, and Viruses • **Activity:** Signal Transduction Simulation
Week 6: April 20th – April 26th	• **Laboratory:** Cellular Respiration • **Activity:** Medical Genetics Simulation
Week 7: April 27th – May 6th (note: all work due by May 6th)	• **Laboratory:** Plant Pigments and Photosynthesis • **Activity:** GMO case study • **Final Course Reflection**

Online Course Resources
The University of Arizona provides a wide variety of resources to help online students succeed, including:

Online Tutoring: UA THINK TANK provides free academic assistance for writing and math, and various other related subjects, at multiple locations and fully online. Students can access free tutoring in-person at the UA Think as well as fully online from the UA Think Tank. To find online tutoring hours, please see http://thinktank.arizona.edu/tutoring/online

24/7 Technical Assistance: Technical assistance is available 24 hours a day, with the exception of University observed holidays. 24/7 can help you with troubleshooting hardware, software, and any special course technology you are using. Available by phone, chat, or help ticket.

- Phone: (520) 626-TECH (8324)
- 24/7 Website

University Libraries: The University Libraries provide resources, services, and expertise to the University and the local community. They support online students in particular with access to scholarly articles and journals, free ebooks, interactive tutorials and helpful research guides. Learn more about these resources and more on their site featuring tools for online students.

University Libraries for Online and Distance Students

Accommodations
At the University of Arizona, we strive to make learning experiences as accessible as possible. If you anticipate or experience barriers based on disability or pregnancy, please contact the Disability Resource Center (520-621-3268, **https://drc.arizona.edu/**) to establish reasonable accommodations.

Course Policies

Code of Conduct
Please review the University's Code of Conduct information, which can be found at https://deanofstudents.arizona.edu/policies-codes

Classroom Behavior
The Arizona Board of Regents' Student Code of Conduct, ABOR Policy 5-308, prohibits threats of physical harm to any member of the University community, including to one's self.

Disruptive Student Behavior
Students are expected to be familiar with the UA Policy on Disruptive Student Behavior in an Instructional Setting found at:
http://policy.arizona.edu/education-and-student-affairs/disruptive-behavior-instructional-setting

Threatening Student Behavior
The University of Arizona seeks to promote a safe environment where students and employees may participate in the educational process without compromising their health, safety or welfare. The Arizona Board of Regents' Student Code of Conduct, ABOR Policy 5-308, prohibits threats of physical harm to any member of the university community, including to one's self. Threatening behavior can harm and disrupt the University, its community, and its families.

Threatening behavior means any statement, communication, conduct or gesture, including those in written form directed towards any member of the university community that causes a reasonable apprehension of physical harm to a person or property. A student can be guilty of threatening behavior even if the person who is the object of the threat does not observe or receive it, so long as a reasonable person would interpret the maker's statement, communication, conduct or gesture as a serious expression of intent to physically harm. You are encouraged to read more on this at http://deanofstudents.arizona.edu/accountability/disruptive-student-behavior

The Policy on Threatening Behavior by Students found at http://policy.web.arizona.edu/education-and-student-affairs/threatening-behavior-studentshttp://policy.web.arizona.edu/education-and-student-affairs/threatening-behavior-students

Online Class Etiquette
What is Netiquette? Simply stated, it's network etiquette -- that is, the etiquette of cyberspace. And "etiquette" means "the forms required by good breeding or prescribed by authority to be required in social or official life." In other words, Netiquette is a set of rules for behaving properly online. Please refer to this website to further your understanding of online class etiquette:
http://www.albion.com/netiquette/introduction.html

Student Code of Academic Integrity
Academic Integrity at the University of Arizona is the principle that stands for honesty, and ethical behavior in all homework, tests and assignments. All students should act with personal integrity and help to create an environment in which all can succeed.

Dishonesty will not be tolerated in this course. This includes, but is not limited to, cheating, plagiarizing, fabricating information or citations, facilitating acts of academic dishonesty by others, having unauthorized possession of examinations, submitting work of another person or work previously used without informing the instructor or tampering with the academic work of other students. Students who are found to be dishonest will be reported to the Dean of Students Office and receive a sanction, such as a failing grade on the assignment, exam, and/or in the course. Students with questions on this policy should refer to the UA Code of Academic Integrity, available at
http://deanofstudents.arizona.edu/policies-and-codes/code-academic-integrity

Plagiarism
This course will be using Turnitin, a plagiarism detection software, for some assignments. **The University Libraries have some excellent tips for avoiding plagiarism, available at** http://www.library.arizona.edu/help/tutorials/plagiarism/index.html

Discrimination and Harassment
Policies against discrimination and harassment, along with offices for reporting concerns related to discrimination or harassment, http://policy.arizona.edu/human-resources/nondiscrimination-and-anti-harassment-policy

Communication
You are responsible for reading emails sent to your UA account from your professor's UA account and the announcements that are placed on the course D2L site. Information about readings, news events, your grades, assignments and other course related topics will be communicated to you with these electronic methods. The official policy can be found at http://www.registrar.arizona.edu/emailpolicy.htmh

Absence and Class Participation Policies
Participating is vital to the learning process. As such, it is critical that students participate in the course activities during the week they are assigned. If you anticipate being absent or are unexpectedly absent, please contact me as soon as possible.

To request a disability-related accommodation to this attendance policy, please contact the Disability Resource Center at (520) 621-3268 or drc-info@email.arizona.edu.

If you are experiencing unexpected barriers to your success in your courses, the Dean of Students Office is a central support resource for all students and may be helpful. The Dean of Students Office is located in the Robert L. Nugent Building, room 100, or call 520-621-7057.

Accessibility and Accommodations
It is the University's goal that learning experiences be as accessible as possible. If you anticipate or experience physical or academic barriers based on disability, please let me know immediately so that we can discuss options. You are also welcomed to contact Disability Resources (520-621-3268) to establish reasonable accommodations. For additional information on Disability Resources and reasonable accommodations, please visit http://drc.arizona.edu

Grievance Policy
Should a student feel he or she has been treated unfairly there are some resources available. With few exceptions, students should first attempt to resolve difficulties informally by bringing those concerns directly to the person responsible for the action, or with the student's graduate advisor, Assistant Dean for Student and Alumni Affairs,

department head, or the immediate supervisor of the person responsible for the action. If the problem cannot be resolved informally, the student may file a formal grievance. Information can be found at http://deanofstudents.arizona.edu/policies-and-codes/code-academic-integrity

University Final Grade Appeal Policy
The University Final Grade Appeal Policy can be found here:
http://advising.arizona.edu/content/policies-procedures/petitions-grade-appeals
http://catalog.arizona.edu/2015-16/policies/gradappeal.htm

Notice of Potentially Objectionable Materials
As this is an introductory biology course, we will be discussing biological evolution and sexual reproduction in a **scientific** manner.

Confidentiality of Student Records
Family Educational Rights and Privacy Act of 1974 (FERPA) is the federal law that governs the rights of students and institutional responsibilities with respect to student records. FERPA is a federal law designed to protect the privacy of a student's educational record. More details on what FERPA is about and specifics of what constitutes an Education Record can be accessed at https://www.registrar.arizona.edu/personal-information/family-educational-rights-and-privacy-act-1974-ferpa

If you have any questions regarding any of the information provided on this site, please contact the University of Arizona Office of the Registrar via email at: REG-reghelp@email.arizona.edu.