

MCB181L Syllabus S18

I> Course description and goals

A] Biology 181L is the laboratory companion course to the Bio 181R lecture course. The credit and grade for 181L is separate from the lecture. You are not *required* to take the two courses simultaneously, although it is highly recommended that you do so.

B] This course is designed to deepen your familiarity with the scientific approach and experimental design, as well as a range of fundamental biological concepts. Your level of involvement will dictate the benefit you receive from the course. Activities will include both 'wet' experiments and computer simulations, depending upon which format best engages the big ideas in an area of inquiry.

C] Specific topics include the scientific approach; the nature of the molecular world and the structure and function of key macromolecules; detection of macromolecules and their state; basic molecular genetics

D] **Learning objectives** (matches Lab Manual, p. ix)

If our time together this semester is successful, by the end of it, you will understand and be able to explain to a non-scientist in a meaningful way:

- 1]** Distinguish between understanding a process or concept and merely knowing the labels associated with it; be able to clearly communicate this understanding both verbally and in written format
- 2]** Understand and be proficient in the cyclical nature of the scientific process: hypothesis-model-test-refine-repeat
- 3]** Understand that molecules can be non-charged, positive, negative or partial-positive/negative and apply that understanding to explain how all of biology arises from molecular properties
- 4]** Understand how molecules manifest in the macro world (color, odor, feel)
- 5]** Understand how and why each class of macromolecules occupies its niche (DNA is info storage; protein is workhorse; lipids are compartment barriers; carbs are energy storage...)
- 6]** Understand how genetic information is stored, accessed, and distributed
- 7]** Understand a protein in depth (how amino acids drive its structure and properties, how its properties generate its function, how its function allows life/health, and how changes in structure cause changes in health).
Examples: hemoglobin, opsin
- 8]** Understand the nature, flow and storage of energy within and between molecules
- 9]** Become proficient in experimental design (defining an answerable question, designing an approach, identifying the adjuncts [controls] required to answer it)

E] Basic mathematics and chemistry knowledge is assumed *and necessary*. We will review Chemistry essentials the first week but it is your responsibility to seek help if this review is not sufficient.

II> Lab Administration (People)

A] Emily Dykstra- Lab Director edykstra@email.arizona.edu

Office Hours: By appointment in LSS 450

B] Tina Gingras - Course Coordinator BSE109
introbio@email.arizona.edu phone: 621-9267

Office Hours: By appointment

OR contact us via email (IntroBio@email.arizona.edu) to set up an appointment

C] Sarah Baillie - Lab Prep Coordinator

D] Individual lab sections will be taught by different Lab Instructors; your Lab Instructor (LI/TA) is listed as 'TA Specific Sections' in the D2L Class list

1] Lab instructors will have 1 scheduled and 1 by appointment office hour /week and be able to answer questions from lab, questions about policies and questions about grades

III> Absences and lateness

A] The UA's policy concerning Class Attendance, Participation, and Administrative Drops is available at: <http://catalog.arizona.edu/policy/class-attendance-participation-and-administrative-drop>

B] Laboratory attendance is required

1] Arrival more than 20 minutes late constitutes being absent from the lab; you will be asked to leave if you arrive more than 20 minutes late.

(a) If you are going to be late by 20' or more, contact the absences website immediately (<https://blc.arizona.edu/IntroBio/absence/>)

2] Late arrivals (less than or equal to 20 minutes after start of lab) are not entitled to any additional time on in-lab quizzes

3] Leaving before lab exercises and discussions are complete constitutes being absent from the lab

4] The UA policy regarding absences for any sincerely held religious belief, observance or practice will be accommodated where reasonable, <http://policy.arizona.edu/human-resources/religious-accommodation-policy>.

5] Absences pre-approved by the UA Dean of Students (or Dean Designee) will be honored. See: <https://deanofstudents.arizona.edu/absences> NOTE: If you know you will be having a number of Dean's Excused absences, it is *your responsibility* to register for a lab session that will conflict with the fewest number of these absences

C] Absence from more than 3 labs (**excused** or **unexcused**) will result in a **FAILING** grade in the course.

D] **Lab absences** are made-up by attending another lab section that meets *the same week as your absence* or the make-up lab (held Monday 2-5pm the following week); this requires formal approval from the lab administrator via the Absences Website. In order to ensure that you will be able to attend a lab section, report your absence **as soon as possible**. If you do not sign up for a make-up lab and bring in the accompanying form verifying that you have signed up and are attending the section you signed up for, you will not be permitted to make-up the lab.

In order to receive credit for a missed lab, you **MUST ATTEND** a make-up lab. If you do not attend a make-up lab, you will receive a **zero** for all assignments associated with that lab. If your absence is deemed excused, you will receive full credit for the work you complete. If your absence is deemed unexcused, your work will be assessed a 30% penalty. Absences will be excused for exceptional and verifiable reasons only. Arrangements should be made well in advance.

- 1]** Please go to <https://blc.arizona.edu/IntroBio/absence/> and enter your absence request **within 48 hours of your missed lab**
 - 2]** Failing to use the webpage above within 48 hours of your missed lab will constitute an unexcused absence; failing to make a reasonable effort **BEFORE** your absence (if you know you will be absent) may also be judged an unexcused absence
 - 3]** Excusable absences include but are not limited to:
 - Illness accompanied by a **doctor's note**
 - University sponsored event/sport with **Dean's Excuse**
 - Jury Duty or Court Hearing with **corroborating documentation**
 - Medical/Dental Appointment or Emergency with **corroborating documentation**
 - Funeral of Immediate Family Member with **corroborating documentation**
 - Bike/Auto Accident with **police report**
 - 4]** You will have **TWO WEEKS** from the date of your absence to provide *relevant paper work* for excusing your absence. If you miss this deadline your absence will be **UNEXCUSED**.
 - 5]** A Dean's excuse does *not* alter any of these policies and requirements, it specifies that the *reason* is valid; you still must handle the absence as specified. It is anticipated that all absences involving Dean's excuses will be handled in advance of the absence.
- E]** Missing a lab because you were not enrolled in the course constitutes an unexcused absence.
- F]** Labs include many graded exercises including quizzes, lab reports and homework. If you are absent from your regular section of the lab and the absence is unexcused and you attend a make-up lab, you will be given a 30% penalty for all graded exercises associated with that lab class with the exception of the on-line computer tutorials.

G] Failure to have a lab *officially excused* will result in **30% reduction for work done that day in the lab as well as homeworks derived from that lab (all those assigned for that week)**. Absence that are excused will not result in any loss of credit. *For both excused and unexcused absences in-class and take-home lab assignments must be submitted within the deadline specified for the section you attend.* If you attend the Monday make-up section, you will have until the following Sunday night at 11:55pm to submit any take-home assignments assigned for that lab.

1] Once you have submitted a take-home assignment to the D2L Assignments folder, you **MUST** email your Lab Instructor to let them know it is there and ready to be graded. Failure to do so may result in a partial to full reduction in grade for that assignment.

IV> Course Communications

A] Online communication will occur both via D2L and your official UA email address. Please check both frequently.

V> Required Resources

A] Biology 18L lab manual, the course D2L site, access to the on-line tutorials via the Hayden McNeil website and the ThinkBio website:
<https://thinkbio.guru>

1] Computer Tutorials will be accessed via the Hayden McNeil website. You will be given an access code in your lab manual. **You will be required to access the tutorials via this site and if you do not secure an access code you will not be able to earn the 20% of your grade that the computer tutorials are worth.**

2] Purchase of the **current** edition of the lab manual is *required* so that you will have the access code needed to complete the computer quizzes. (Either the Fall 17 or Spring 18 lab manual may be purchased FROM THE UA BOOKSTORE for this semester. The manual must be in its original plastic shrink wrap in order to have a usable access code. Do not buy used lab manuals as they will not have valid access codes.)

B] Some software will be available from the ThinkBio website for download and use on most modern, internet-connected Mac or Windows systems. You can access this material on newer computers in the Science and Main Library.

C] We have made every effort to make the software generally accessible. However, we do not provide individual computer support. UA-provided computers in the Science and Main Library will run this software. If you have trouble installing the software on a library computer, ask for help from library staff.

D] To do some lab exercises, you will need to have the latest versions of [Shockwave](#), [Flash](#), and [QuickTime](#) installed on your computer (Mac users: Quicktime is already installed).

VI> Assignments and Grading Policy (see also cheating; absences and late work)

A] **Assignment relative values:**

All grades from assignments of a given type will be averaged together and then incorporated into a final grade as follows:

Computer Tutorials: 20% (7 total)

In-class Quizzes: 25% (11 total)

Lab Assignments (In-lab and take-home): 50% (10 - 12 total. Different lab assignments may be weighted differently according to their importance and the investment required. The D2L grade book will display the weight of each lab assignment.)

Group Work Participation: 5%

B] Electronic and on-line homework

- 1]** The standard course deadline for lab work done outside of class is 11:55 p.m. the night before your section meets (unless otherwise noted - be sure to check D2L). You are strongly advised to do your work well in advance of this in order to take advantage of Instructor e-mail and office contacts, as well as to avoid loss of credit due to illness or other difficulties occurring closer to the deadline. Given that these assignments are accessible for an entire week, only excused absences *that cover the majority of the period* will prevent you from receiving a zero. If you are going to submit an assignment late, please submit it to the relevant D2L dropbox vs. emailing it to your TA.
- 2]** On-line tutorials should be done *on your own*. Unless your instructor indicates otherwise, on-line work is open book and open-web. Prior to doing an assignment, principles or basic understandings may be freely discussed; demo problems can be jointly worked on, but any work for which you receive an individual score should be executed on your own unless explicitly indicated otherwise.
- 3] Submission:** It is your responsibility to ensure that electronic submissions are successfully stored in a valid format to the **correct D2L Assignments Folder**
 - (a)** For D2L, this means Word .doc or .docx format. You can verify the status of the document by downloading from your D2L account and opening the document
 - (b) Assignments should be submitted with file titled: yournetID_assignmentname**
 - (c)** Assignments submitted to the wrong D2L Assignments Folder will, at minimum, be treated as late work and may not be accepted at all
 - (d)** Inviting your instructor to a Google Doc *does not* constitute turning an assignment in
 - (e)** Only work submitted to D2L will be counted as 'turned in'
 - (f)** For course software, further instructions will be provided on D2L

C] Written work

- 1]** It is your responsibility to follow the format and guidelines provided in the rubric. Work not following the specified format/guidelines may receive zero credit.
 - (a)** Rubrics serve as a *guideline* for assignments vs. step-by-step instructions detailing every last component that is to be included in an assignment
- 2]** Written lab assignments submitted late **not** due to absence

- (a) A 20% credit deduction will be assessed prior to grading for work turned in within 24 hours of due date. After 24 hours, a 50% credit reduction will be assessed prior to grading. It is your responsibility to ensure that your instructor receives any work that is not handed in during class.
- (b) Assignments will only be accepted for credit if turned in within one week of the original due date

3] Citations

- (a) Many assignments in this course will require the use of outside resources. These resources may include but are not limited to: course lab manual, text books, websites, articles. Any information that is not considered "common knowledge" should be cited. More information regarding how to decide if a citation is required can be found here: <https://owl.english.purdue.edu/owl/resource/589/2/>
- (b) When an outside source is used, a citation must be included. Failure to include proper citations will result in a 20% reduction in the grade for the entire assignment. There will be no opportunities to 're-do' the assignment in order to include citations, so please ensure compliance with this course policy.

D] Group work

- 1] A number of assignments in and out of class will be group work in which all group members are expected to actively and equitably contribute
- 2] A single grade will be given to all group members; each is responsible for the timely submission and *quality* of the *entire final product*
 - (a) All members are responsible for timely submission of the work. Best advice: submit 24 hours in advance, and have the submitter send confirmatory e-mails to other members
- 3] Individual members may be asked to assess contributions of their fellows; if there is a consensus that a member did not contribute equally, their score may be lowered to reflect this

E] Grade cutoffs will be: A \geq 90.0%; B \geq 80.0%; C \geq 70.0%; D \geq 60.0%

F] Extra credit, curving, bonus points, etc.

- 1] Extra Credit: TBA.
- 2] Curving: there is no guaranteed curve, but we reserve the right to adjust grades in order to ensure uniformity across the lab sections

G] Re-grade Policy

You may submit written assignments for a re-grade within two weeks of having them returned to you. Re-grade requests must be accompanied by a typed clarification of what was overlooked or in error the first time. Typed re-grade requests must be submitted to the D2L Assignments folder entitled 'Re-grade requests'. Requests not submitted to this folder will not be considered. Please include your name, the assignment name and your LIs name in the file name of the document. Your instructor will re-examine the entire work, not just the area in question. The purpose of re-grades is to correct errors in your instructor's understanding or scoring of your work, not

to debate scoring policies. Note: an egregious mis-understanding demonstrated in your regrade request may cost you additional points.

1] You have **2 weeks** to contest the correctness of a posted score. Check your grades in D2L often.

H] Ignorance of the existence of an assignment is no excuse. **Even with an excused absence, it is your responsibility to turn all work from a make-up lab by the specified due dates.**

VII> Incompletes

A] In accordance with university policy, the grade of "I", or incomplete, will only be given to a student whose circumstances prevent course completion. If a student is expected to repeat the entire course, a grade of "E" must be given. Requests must be made in accordance with University policies, which are available at <http://catalog.arizona.edu/policy/grades-and-grading-system#incomplete>

B] Your instructors must approve any "I" grades **before the last week of class**

VIII> Audit Grades and Pass/Fail

A] Students registered for Audit will receive "O" grades as long as they attend every lab. This course is not offered as Pass/Fail

IX> Dropping or Withdrawing from the Course

A] **January 24th** is the last day to drop without a 'W'. **March 27th** is the last day to withdraw from a class (earning a grade of "W") using UAccess. After this date through **May 2nd**, withdrawal is only approved under exceptional circumstances and requires approval by the course administrator and the student's academic dean. A "W" is awarded to students passing at the time of withdrawal, and "E" is awarded if failing. A "W" may also be awarded in case of complete withdrawal from the University. More information can be found here: <http://catalog.arizona.edu/policy/grades-and-grading-system#Withdrawal>

X> Academic Integrity

A] **General:** Students are encouraged to share intellectual views and discuss freely the principles and applications of course materials. However, graded work/exercises must be the product of independent effort unless otherwise instructed. Students are expected to adhere to the UA Code of Academic Integrity as described in the UA General Catalog. See: <http://deanofstudents.arizona.edu/academic-integrity/students/academic-integrity>.

B] Cheating/Plagiarism is an extremely serious matter and will be treated as such. Please note that possible responses to even a first instance of plagiarism include an 'E' for the course or expulsion from the university.

1] See the contract in your lab manual for some guidance.

C] Reports that are highly similar or that lack proper credit for sources of information, will be considered as cases of cheating and/or plagiarism. We strictly adhere to the University's Code of Academic Integrity and Code of

Student Conduct as presented in the University catalog and the Student Handbook (<http://deanofstudents.arizona.edu/codeofacademicintegrity>). Therefore, any case of cheating or plagiarism will, at the very least, receive zero points for that assignment, and could result in failing the course and/or your expulsion from the university. If you have any questions regarding how to properly cite a source for a scientific paper, resolve them with your instructor before you hand the assignment in.

- D]** Lying about submission of electronic work will result in a loss of credit for that work and potentially submission of appropriate Honor Code violation paperwork
- E]** Corrupt, empty or unreadable submissions to D2L DropBox will be treated at the very least as late work and may be dealt with as Academic Integrity issues
- F]** Turnitin.com
 - 1]** If you decide to take and continue in this course, your written submissions will be filtered through a plagiarism-prevention program called TurnItIn.com. You should note that TurnItIn.com – always without your name and any personal information – will retain your paper as part of their database so that students who plagiarize your work can be detected. Because of this program, you will not have to compete with students who commit undetected plagiarism. Anyone who has questions or problems with TurnItIn.com may talk privately about these with the instructor.

XI> Lab/Classroom Rules

- A]** **Read the introductory sections of the Lab Manual** and adhere to those rules. No food or drink is allowed in the lab. We cannot risk contaminating the lab materials, or worse yet, contaminating you! Points may be taken off the week's quiz or homework for failure to observe reasonable clean-up behavior. Do your share in keeping the common areas of the lab clean as well.
- B]** **Lab Safety**

These labs have been developed to minimize dangers posed to students. However, we occasionally use equipment or reagents that can cause injury, and accidents sometimes happen. Report any injury to the prep-room staff or your instructor immediately! Showers, eyewashes, fire extinguishers, and first-aid kits are present in case of an emergency. Closely follow your instructor's instructions in the use of dangerous equipment, and in the disposal of all reagents and supplies.
- C]** **Decorum/Disruptive behavior**

To foster a positive learning environment, students and instructors have a shared responsibility. We want a safe, welcoming, and inclusive environment where all of us feel comfortable with each other and where we can challenge ourselves to succeed. To that end, our focus is on the tasks at hand and not on extraneous activities (e.g., texting, chatting, reading a newspaper, making phone calls, web surfing, etc.).

 - 1]** Students are asked to refrain from disruptive conversations with people sitting around them during lab. Students observed engaging in disruptive activity will be asked to cease this behavior. Those who continue to disrupt

the class will be asked to leave lecture or discussion and may be reported to the Dean of Students.

- 2]** Disruptive behavior is anything that interferes with the teaching/learning environment. Examples from the <http://deanofstudents.arizona.edu/examplesofdisruptivebehavior> include:
- Being persistently tardy or leaving early
 - Talking incessantly during a presentation
 - Loudly and frequently interrupting the flow of class with (inappropriate) questions or interjections
 - Belligerence when confronted regarding inappropriate behavior in class
 - Cell phones ringing in a classroom, text messaging, chatting online.
 - Persistent and unreasonable demands for time and attention in or out of the classroom

Any of these actions, even for the first offense, may lead to a range of disciplinary actions from losing points on an in-class quiz to your being administratively dropped from the course

D] Threatening Behavior Policy

The UA Threatening Behavior by Students Policy prohibits threats of physical harm to any member of the University community, including to oneself. See <http://policy.arizona.edu/education-and-student-affairs/threatening-behavior-students>.

XII> e-mail communication

A] Lab Instructors will respond to emails within 24 hrs (except on weekends). Emily is generally accessible by e-mail 2x/day on weekdays

B] Always include the course and section number in the Subject line

C] Email communications should be courteous and informative. Please include the tag "MCB181L" in the subject line for ready identification. Use actual English words.

1] Emails that do not achieve these minimum standards may receive no reply

XIII> Accessibility and Accommodations:

Our goal in this classroom is that learning experiences be as accessible as possible. If you anticipate or experience physical or academic barriers based on disability, please let your Lab Instructor know immediately so that you can discuss options. You are also welcome to contact the Disability Resource Center (520-621-3268) to establish reasonable accommodations. For additional information on the Disability Resource Center and reasonable accommodations, please visit <http://drc.arizona.edu>.

If you have reasonable accommodations, please plan to meet with Lab Instructor by appointment or during office hours to discuss accommodations and how the course requirements and activities may impact your ability to fully participate.

Please be aware that the accessible table and chairs in this room should remain available for students who find that standard classroom seating is not usable.

XIV> Challenging topics

A] This course deals with biological evolution. This underlying principle an inescapable foundation for the understanding of biology. It is critical for biologists, health care workers and an informed citizenry to understand what evolutionary biology does and does not say about current and historical life on earth. Evidence supporting the theory of evolution, as well as understanding of its explanatory power will be assessed.

B] We will discuss a number of genetic diseases and mutations that may affect you or your family/friends

XV> Inclusion and Diversity

A] Inclusive Excellence is a fundamental part of the University of Arizona's strategic plan and culture. As part of this initiative, the institution embraces and practices diversity and inclusiveness. These values are expected, respected and welcomed in this course.

B] This course supports elective gender pronoun use and self-identification; rosters indicating such choices will be updated throughout the semester, upon student request. As the course includes group work and in-class discussion, it is vitally important for us to create an educational environment of inclusion and mutual respect. Additional information can be found here:

XVI> Policy Regarding Threatening Behavior: The UA Threatening Behavior by Students Policy prohibits threats of physical harm to any member of the University community, including to oneself. See <http://policy.arizona.edu/education-and-student-affairs/threatening-behavior-students>.

XVII> Nondiscrimination and Anti-harassment policy

The University is committed to creating and maintaining an environment free of discrimination; see <http://policy.arizona.edu/human-resources/nondiscrimination-and-anti-harassment-policy>

XVIII> Alterations to this syllabus may be made if deemed necessary. Advance notice will be clearly provided to all students attending lab and an on-line notification will be made as well.