

BIMM101 Winter 2023 Syllabus*

**Adapted from Dr. Lisa McDonnell*

Welcome to BIMM 101: Recombinant DNA Laboratory! In BIMM101 we aim to function as an inclusive learning community to develop an understanding of research in molecular biology through experimental design, critical analysis of data and literature, and experimentation. We will be spending most of our time working on a CRISPR editing experiment.

BROAD Learning goals

- Apply knowledge of molecular biology concepts and lab techniques to plan experiments, explain and troubleshoot results
- Explain the importance of proper controls in designing experiments and interpreting results
- Perform basic lab math skills, statistical analysis, and graphing
- Conduct experiments using various recombinant DNA/molecular biology techniques
- Draw conclusions based on evidence and reasoning
- Use basic bioinformatics databases and applications
- Use scientific (that is, clear and informative) writing to plan and record your experiments and to interpret them critically
- Critically evaluate scientific writing (your own, and that of peers)
- Collaborate with one another to learn foundation biological concepts and laboratory skills

Class & Lab Times: Wednesdays/Fridays - 11:00am-12:20pm (class), 1:30pm-5:20pm (lab)

There will be two lectures per week unless stated otherwise, however, in some weeks we will have only one lab!! Please consult [the lab schedule](#) [Links to an external site.](#)!

In-person classes: TATA Hall – 2501

In-person labs: York Hall 2310 (Section B01), York Hall 2332 (Section B02)

Office hours (Dr. Tour):

TBA

Being proactive to ask questions during office hours, class, and labs is something I value and appreciate – please ask whatever questions you may have about course material. I'm also more than happy to chat about other topics during my office hours or during waiting times in the lab (e.g., career goals (or confusions!), hobbies, other projects, research, and other topics)

Instructional assistants:

Section B01: Urrete, Josef jurrete@ucsd.edu

Section B02: Ferry, Amir amferry@ucsd.edu

Course site: <https://canvas.ucsd.edu/>

Learning in this course

Lab

This course is designed to be an environment for everyone to learn and construct a shared understanding of the material. Active participation by asking and answering questions and participating in discussions (e.g., during office hours, class, lab), is encouraged. Being able to communicate understanding, and confusion, is critical to success in any discipline, and is very useful for learning. To encourage collaboration, grades will not be assigned on a curve. Instead of memorization, we will focus on developing an understanding of fundamental concepts as they apply to different examples. Therefore, tests and assignments will include questions that are based on solving problems in new contexts, analyzing and interpreting data to draw conclusions, and critiquing claims.

Laboratory & Class safety

Safety precautions are crucial in the laboratory setting. Biology lab safety training and assessment (<https://biology.ucsd.edu/education/undergrad/course/ug-labs.html>Links to an external site.) must be completed by the **beginning of the second lab** in week 1 (Friday Jan 13, 2023). Appropriate laboratory attire and personal protective equipment (PPE) are required **starting in Week 3**, including laboratory coats that cover to the knees, UV-blocking safety glasses or goggles, long pants or equivalent, long socks or equivalent, and closed-toe and closed-heel shoes.

Per [UCSD guidelines](#) masking **is now optional**, however, if you or people whom you are in close contact with have underlying conditions, **don't hesitate to wear a mask during class and labs** (I will be wearing N95 mask, as I am immunocompromised). Free masks are available on campus (please see this [link](#) for locations). are required at all times during class and lab. There is no eating or drinking allowed in class or lab (for eating and drinking and mask breaks please step outside, away from others). Due to the long exposure times in labs, KN95 respirator masks OR doubling-up on masks may be a good idea.

Laboratory attendance

Attendance in laboratory is required. Attending the first lab is required to maintain your seat in the course.

Additional policies are available online

(<https://biology.ucsd.edu/education/undergrad/course/ug-labs/index.html>Links to an external site.) Attendance in the lab (both bioinformatics and wet labs) is required in this course. Only the instructor (Dr. Tour) can approve an absence. Please get in touch with your Instructor as soon as possible if you are unable to attend lab because of documented illness, quarantine, or family emergency. In excused cases the instructor will work with you to ensure you are able to complete the required course work. One unapproved absence will result in grade a 2% drop in course grade, and two unapproved absences will result in a failing course grade.

ADD/DROP DEADLINES are different for lab courses than lecture courses. Students who drop a Biology lab class after the end of the second class meeting will be assigned a "W". Additional details: <http://biology.ucsd.edu/go/ug-labs>.

Grading

Lab tasks and notebooks:

- Pre-lab assignments, including Molecular biology review (one lowest score dropped, out of 9 pts) 10%
- Lab notebooks (one lowest score dropped, out of 9 pts) 10%
- Three Lab notebooks will be graded (out of 15 pts) 8%

CRISPR write-up 15%

Two Midterms 20% (10% each)

Third Midterm (final exam, comprehensive) 20%

In-lab work: preparedness, collaboration, accuracy 6%

Homework quizzes (one lowest score dropped) 5%

Professionalism 3%

In-class participation 3%

The following grading scheme will be used. The course is not graded on a curve (i.e., 20% of students getting A, 20% B, 20% C, and such). Thus, the ability to do well in this course is not dependent on others doing poorly.

97-100	A+	76.75-79.74	C+
92.75-96.75	A	72.75-76.74	C
89.75-92.74	A-	66 -72.74	C-
86.75-89.74	B+	59.75-65.75	D
82.75-86.74	B	0-59.74	F
79.75-82.74	B-		

Weekly Homework/Recap Quizzes: The quizzes posted on Canvas are meant as a review of concepts covered in class and lab the week prior and as a preparation for exams. Most weeks a Recap Quiz is due on Sunday at 11:59pm. These quizzes are also a good chance for you to notice if you are confused on certain topics or protocols. **Please follow-up on things you are confused about! Ask questions in class or lab, come to office hours!**

There are nine Recap Quizzes planned. Be sure to make your best attempt at solving these questions. Your answers will help you to learn and me to know what topics need further review. You will have two attempts and your last attempt will count. One lowest score will be dropped. ***If you find yourself unable to complete a quiz or a lab notebook because of illness or family emergency there are no extensions – the missed quiz will count as the lowest score and be dropped.***

Lab notebooks: Each student will be assigned an individual digital lab/research notebook (Google Doc) that you will use for the quarter. These will be made available through the Canvas Site and via email to you directly. Complete and organized lab notebook entries are a critical part of effective work in a research lab. As such, we expect students to practice good lab notebook entry habits. Please consult the lab notebook guidelines (Canvas), which includes a link to an example notebook. **Lab notebook entries will be regularly checked for both before-lab work and in-lab work.** You will receive 1 pt for complete and accurate notebook, 0.5 pt for incomplete, 0 pt for missing notebook. One pre-lab notebook score and one Lab notebook score will be dropped. Three Lab notebooks will be selected and graded for correctness (out of 5 pts). ***If you find yourself unable to complete up to two lab notebook entries because of illness or family emergency there are no extensions – those missed entries will count as the two low scores to be dropped.***

Molecular Biology Review Assignment: An assignment with questions to review some background molecular biology and experimental design concepts will be due during Week 1. This assignment will count as the

first Pre-lab. Instructions to submit the assignment will be posted on Canvas.

Tests: There are two Midterms and one comprehensive Final exam. All exams will be scantron based (I will provide the scantrons). All exams will be open-notes: you can use any resources, except for any type of electronics.

Midterm 1: Wed, Feb 1, in lab (during lab time, covers classes 1-6)

Midterm 2: Fri, Feb 24, in lab (during lab time, covers classes 7-12)

Final: Friday March 11, 1:30-4:30pm in lab (during lab time, comprehensive).

If you miss a test because of illness or family emergency, please contact me (Dr. Tour, etour@ucsd.edu) immediately.

CRISPR Write-up: Consult course schedule for due dates, and guidelines/rubrics will be provided on Canvas.

Professionalism: This portion of the course grade is intended to motivate students to consider the impact of their actions on their own learning and the learning of others in the course. Unprofessional interactions consume time yet have no meaningful benefits to you, your fellow students, and/or the teaching team. Analogously in the workplace, being unprofessional to your colleagues or supervisors will only discount you. When you are discounted, you will not be invited for new opportunities that you may or may not be aware of. Professionalism can be demonstrated through individually demonstrating meaningful participation in the course (especially during lab time), maturity and respectful behavior towards others.

By default, every student is assumed to be professionally mature. Hence, this component is awarded to every student at the beginning of the quarter. During the quarter, based on observations by the teaching team, which includes but is not limited to participating in lab sessions, one-on-one interactions, electronic communication, contributing data to class data sets according to deadlines, and follow-up conversations on grades, your professionalism credit may be deducted.

Example interactions with meaningful benefits:

- Actively participating in lab sessions, which includes being prepared to engage in discussions and ask questions.
- Developing deeper insight into course material, concepts, biology, and/or society in general
- Working collaboratively to improve in skill building and future opportunities
- Contributing to an inclusive learning environment
- Learning conceptually and meaningfully why full credit was not awarded for an assignment
- Clarifying course material that facilitates deeper learning
- Reporting errors or problems in class, on assignments, or for other course material
- Arriving on-time to lab sessions and being prepared to work in lab

Example interactions that have no meaningful benefits and thus should be avoided:

- Not showing up or being late to lab session
- Contributing inequitably to team work

- Harassing and/or bullying the instructional team or other students, either in person or online
- Asking questions when the information is already available or will eventually be known (this does not include asking clarifying questions about content/concepts)
- Ignoring the directions or requests from the instructional team

In-lab work: this grade will be assigned by your IA's based on multiple criteria, such as being prepared for the lab, collaborating effectively, following IA's and instructor's directions, participating in in-lab discussions, accurately performing experiments, active participation in your group's and your class' analysis of lab results.

Class participation: being present, participating in class discussions, answering clicker questions.

LATE Assignments and quizzes

Assignments must be submitted on time to be eligible for full credit. Late assignments may be subject to a 10% penalty per day, to a maximum of 2 days late. Please get in touch immediately if you anticipate challenges completing work on time.

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REGRADES

If a grading error has been made, you should submit a re-grade request to your Instructional Assistant. Students who submit items for re-grading understand that we may re-grade the entire item and the score may go up or down.

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Academic integrity

<https://students.ucsd.edu/academics/academic-integrity/index.html>Links to an external site.

Integrity of scholarship is essential for an academic community. The University expects that both students and faculty will honor this principle and in so doing protect the validity of University intellectual work. For students, this means that all academic work will be done by the individual(s) to whom it is assigned, without unauthorized aid of any kind. In this course, we need to establish a set of shared values. Following are values* adopted from the [International Center for Academic Integrity \(Links to an external site.\)](#) Links to an external site., which serve as the foundation for academic integrity.

	As students we will.....	As the teaching team we will.....
Honesty	<ul style="list-style-type: none">• Honestly demonstrate your knowledge and abilities according to expectations listed in the syllabus or in relation to specific assignments and exams• Communicate openly without using deception, including citing appropriate sources	<ul style="list-style-type: none">• Give you honest feedback on your demonstration of knowledge and abilities on assignments and exams• Communicate openly and honestly about the expectations and standards of the course through the syllabus and in relation to assignments and exams
Responsibility	<ul style="list-style-type: none">• Complete assignments on time and in full preparation for class• Show up to class on time and be mentally and physically present	<ul style="list-style-type: none">• Give you timely feedback on your assignments and exams• Show up to class on time and be mentally and physically present

	<ul style="list-style-type: none"> • Participate fully and contribute to team learning and activities 	<ul style="list-style-type: none"> • Create relevant assessments and class activities
Respect	<ul style="list-style-type: none"> • Speak openly with one another while respecting diverse viewpoints and perspectives • Provide sufficient space for others to voice their ideas 	<ul style="list-style-type: none"> • Respect your perspectives even while we challenge you to think more deeply and critically • Help facilitate respectful exchange of ideas
Fairness	<ul style="list-style-type: none"> • Contribute fully and equally to collaborative work, so that we are not freeloading off of others on our teams • Not seek unfair advantage over fellow students in the course 	<ul style="list-style-type: none"> • Create fair assignments and exams and grade them in a fair and timely manner • Treat all students and collaborative teams equally
Trustworthiness	<ul style="list-style-type: none"> • Not engage in personal affairs while on class time • Be open and transparent about what we are doing in class • Not distribute course materials to others in an unauthorized fashion 	<ul style="list-style-type: none"> • Be available to all students when we say we will be • Follow through on our promises • Not modify the expectations or standards without communicating with everyone in the course
Courage	<ul style="list-style-type: none"> • Say or do something when we see actions that 	<ul style="list-style-type: none"> • Say or do something when we see actions that

undermine any of the above values

- Accept the consequences of upholding and protecting the above values

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- Accept the consequences of upholding and protecting the above values

** This class statement of values is adapted with permission from Tricia Bertram Gallant Ph.D.*

All course materials are the property of the instructor, the course, and the University of California, San Diego and **may not** be posted online, submitted to private or public repositories, or distributed to unauthorized people outside of the course. Any suspected instances of a breach of academic integrity will be reported to the Academic Integrity Office for review and possibly given a score of 0.

In this course we do a lot of group work, and I often encourage you to discuss and share thinking. It is important to get feedback on your ideas and work, but you are still responsible for producing your own work, in your own words, from your own effort.

Student Resources for Support and Learning

ACADEMIC SUPPORT

[Geisel Library](#)[Links to an external site.](#)

Research tools and eReserves

[Content Tutoring with the Teaching + Learning Commons](#)[Links to an external site.](#)

Drop-in and online tutoring through the Academic Achievement Hub

<u>Supplemental Instruction with the Teaching + Learning Commons</u> <u>Links to an external site.</u>	Peer-assisted study sessions through the Academic Achievement Hub to improve success in historically challenging courses
<u>Writing Hub Services in the Teaching + Learning Commons</u> <u>Links to an external site.</u>	Improve writing skills and connect with a peer writing mentor
<u>Learning Strategies Tutoring</u> <u>Links to an external site.</u>	Address learning challenges with a metacognitive approach
<u>OASIS</u> <u>Links to an external site.</u>	Intellectual and personal development support
<u>Student Success Coaching Program</u> <u>Links to an external site.</u>	Peer mentor program that provides students with information, resources, and support in meeting their goals
<u>Academic Integrity</u> <u>Links to an external site.</u>	Policy on Academic Integrity of Scholarship and strategies to excel with integrity
<u>Technical Support</u> <u>Links to an external site.</u>	Assistance with accounts, network, and technical issues

STUDENT RESOURCES

<u>Basic Needs</u> <u>Links to an external site.</u>	Provides access to food, housing, and financial resources
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[Counseling and Psychological Services \(CAPS\)Links to an external site.](#)

Provides services like confidential counseling and consultations for psychiatric services and mental health programming

[Community CentersLinks to an external site.](#)

As part of the [Office of Equity, Diversity, and InclusionLinks to an external site.](#) the campus community centers provide programs and resources for students and contribute toward the evolution of a socially just campus

[Counseling and Psychological Services Links to an external site.](#)

Individual, group, couples, and family psychotherapy services for registered undergraduate and graduate students

[Office for Students with Disabilities Links to an external site.](#)

Documents students disabilities, provides accessibility resources, and reasonable accommodations

[Triton Concern Line Links to an external site.](#)

Report students of concern at (858) 246-1111

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DISCRIMINATION AND HARASSMENT

The University of California, in accordance with applicable federal and state laws and university policies, does not discriminate on the basis of

race, color, national origin, religion, sex, gender, gender identity, gender expression, pregnancy (including pregnancy, childbirth, and medical conditions related to pregnancy or childbirth), physical or mental disability, medical condition, genetic information, ancestry, marital status, age, sexual orientation, citizenship, or service in the uniformed services (including membership, application for membership, performance of service, application for service, or obligation for service in the uniformed services). The university also prohibits harassment based on these protected categories, including sexual harassment, as well as sexual assault, domestic violence, dating violence, and stalking. The nondiscrimination policy covers admission, access, and treatment in university programs and activities.

If students have questions about student-related nondiscrimination policies or concerns about possible discrimination or harassment, they should contact the Office for the Prevention of Harassment & Discrimination (OPHD) at (858) 534-8298, <https://ophd.ucsd.edu/Links to an external site.> , or <http://ophd.ucsd.edu/report-bias/index.htmlLinks to an external site.>

Campus policies provide for a prompt and effective response to student complaints. This response may include alternative resolution procedures or formal investigation. Students will be informed about complaint resolution options. A student who chooses not to report may still contact CARE at the Sexual Assault Resource Center for more information, emotional support, individual and group counseling, and/or assistance with obtaining a medical exam. For off-campus support services, a student may contact the Center for Community Solutions. Other confidential resources on campus include Counseling and Psychological Services, Office of the Ombuds, and Student Health Services.

CARE at the Sexual Assault Resource Center: 858.534.5793
| sarc@ucsd.edu | <https://care.ucsd.edu>Links to an external site.
Counseling and Psychological Services (CAPS): 858.534.3755
| <https://caps.ucsd.edu>Links to an external site.

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Accessibility

<http://disabilities.ucsd.edu>Links to an external site. | osd@ucsd.edu | 858-534-4382

Any student with a disability is welcome to contact me early in the quarter to work out accommodations to support their success in this course. Students requesting accommodations for this course due to a disability should work through the Office for Students with Disabilities (OSD). Instructors will receive Authorization for Accommodations Letters from the OSD online portal. Whenever possible, we will use universal designs that are inclusive. If you have feedback on how to make the class more accessible, please get in touch!

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INCLUSION

It is our goal to create a learning environment that supports diversity of thought, perspective, experience, and identities. We encourage all of you to participate in discussion and contribute to the field from your perspective. If you have feedback on how to make the class more inclusive, please get in touch!

Office of Equity, Diversity, and Inclusion:

858.822.3542 | diversity@ucsd.edu | <https://diversity.ucsd.edu/Links> to an external site.

<https://students.ucsd.edu/student-life/diversity/index.html>Links to an external site.

<https://regents.universityofcalifornia.edu/governance/policies/4400.html> (Links to an external site.)Links to an external site.

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LETTERS OF RECOMMENDATION

If you think you may want me to write you a letter of recommendation (or any other instructor), please consider what a good letter would contain and how your actions in the course demonstrate the qualities you will want highlighted in a good letter. When students ask me for a letter of recommendation, I ask them to write to me about how they demonstrated critical thinking, leadership, collaboration, and professionalism. I will be specifically looking for examples of these qualities *that I could have noticed* during class, lab and office hours. Be sure to actively participate in the discussions, talk to me during the lab and my office hours: ask questions, offer your own ideas and interpretations of your results, bring interesting facts/papers that are connected to the material we are studying. If you don't actively show the qualities that are needed to write a good letter, it will be hard for me to write a letter that is meaningful and useful.

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SUBJECT TO CHANGE POLICY

The information contained in the course syllabus may be – under certain circumstances (e.g., to enhance student learning or respond to our ever-changing world) – subject to change with reasonable advance notice, as deemed appropriate by the instructor.

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TECHNICAL SUPPORT

For help with accounts, network, and technical issues: <https://acms.ucsd.edu/contact/index.html>Links to an external site.

For help connecting to electronic library resources such as eReserves and e-journals:

<https://library.ucsd.edu/computing-and-technology/connect-from-off-campus/>Links to an external site.