

Fall 2019

BIMM 101—Recombinant DNA Techniques

Andrew Cooper

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Lecture Meeting: MWF 8:00-8:50 am YORK 4080A

Lab Meeting: WF 9:00-12:50 pm YORK 4318/4332

Office Hours: Monday 9:00-10:00 am and Wednesday 3:45-4:45 pm in HSS 1145B
(or e-mail me to schedule an appointment)

Course Learning Objectives:

By the end of this course, you should be able to:

1. Demonstrate proficiency with basic molecular biology techniques.
2. Apply knowledge of molecular biology concepts and techniques to plan and troubleshoot experiments.
3. Interpret results in a biological context and report them in a coherent and accurate written form.
4. Explain the importance of proper controls in designing experiments and interpreting results.
5. Perform basic lab math skills, statistical analysis, and generate graphs.

Contacting Me: Please ensure that all e-mails include BIMM 101 in the subject line and if the matter requires immediate attention include URGENT in the subject line as well. If I do not respond to an e-mail within 24 hours please send it again.

Required Materials: Lab Manual (purchase at the bookstore), carbonless copy notebook (bookstore or use one from a previous course with remaining pages), knee-length lab coat, and UV-blocking safety glasses or goggles. Long pants and closed-toe/heel shoes are required in lab (no visible skin from the waist down, including ankles). Fine-tipped sharpie pen in a dark color for labelling. iClicker for lecture participation, registered on Canvas. (Optional): Calculator, you will not be allowed to use cellphones on the quizzes.

Computers: We will often use computers for data analysis and other exercises. There is access to a limited number of computers in lab, therefore if you have your own laptop it is recommended that you bring it on days scheduled for computer activities.

Canvas: All course related information will be posted on our Canvas site. The lecture slides will usually be posted either before lecture or immediately after. Please check the Canvas site and your UCSD e-mail regularly for any announcements.

Podcast: Each lecture will be podcasted.

iClickers: iClickers are required for this course. The frequency in this classroom is AD. You must register your clicker on Canvas, by Friday, October 4th. Clicker participation will be counted beginning with Lecture 2 on Monday, September 30th.

Instructional Assistants (IAs):

Nevarez, Andres

ajnevare@ucsd.edu

D01 – YORK 4318

Swink, Kelsey

kswink@ucsd.edu

D02 – YORK 4332

Pre-Lab Quizzes: There will be on-line quizzes due before lab most section covering the protocols that will be performed that day. These will be available on the course Canvas site at 12:00 pm two days before the related lab and due at 8:00 am the day of that lab. Days when there is no pre-class quiz are indicated on the course schedule.

In-Class Quizzes: Throughout the quarter there will be 8 quizzes that will be based on material from previous lectures & labs. Six of these quizzes will take place immediately at the start of lecture and cannot be made up if missed. Two of these quizzes will be take home quizzes to be turned in on Canvas. Quizzes will not be returned. You may review the quizzes at office hours or by appointment.

Lab Notebook: You will be required to maintain a complete and organized lab notebook. Before the class begins you need to obtain a carbon-less copy lab notebook. For each lab there should be a dated entry containing an outline of the experiments/protocols being done that day, the goals of the experiments, prediction about the outcome, as well as observations made throughout the experiments and clearly labeled results and analysis. Throughout the quarter the lab notebooks will be collected and graded at random, with no advance warning.

Writing Assignments: There will be 7 written assignments throughout the quarter. Writing assignments must be uploaded to Turnitin on Canvas before lecture begins (8:00 am) on the day the assignment is due. Additionally, a print copy of the assignments must be handed in within the first 10 minutes of lab. Assignments turned in after the first 10 minutes of lab, but still during section, will have a 10% deduction. Assignments turned in within 24 hours of the due date will have a 20% deduction. After 24 hours, late assignments will not be accepted.

Assignment 1: Writing in your own voice Assignment (50 pts)

Due: October 4th

Assignment 2: Agarose Gel Analysis Mini-Report (50 pts)

Due: October 11th

Assignment 3: PCR Variables Mini-Report (50 pts)

Due: October 25th

Assignment 4: Ligation Variables Mini-Report (50 pts)

Due: November 8th

Assignment 5: Site-Directed Mutagenesis Mini-Report (100 pts)

Due: November 27thAssignment 6: *C. elegans* RNAi Assignment (50 pts)Due: December 4th

Assignment 7: PTC Analysis Assignment (50 pts)

Due: December 11th

More details will be provided for each assignment.

Final: There will be a cumulative final exam during the last lab section (Friday, December 6th).

Professionalism: Activities in a lab environment should be undertaken with caution and maturity, as careless actions can quickly result in injury or damage to equipment. The assumption is that all students will act with appropriate maturity and are automatically

given 50 points at the start of the semester. Deductions can be made by the instructor or IAs for unprofessional activities in lab, through one-on-one conversations, or electronic interactions.

In-Class Participation Points: There will be 26 lectures throughout the semester where clicker participation will be monitored. Clicker points will be counted starting Monday, September 30th. You do not need to get the correct answer for clicker questions, just click in for every question. You must click in for the question to be eligible for participation points for that lecture, however this is not sufficient for full participation scores, you must also actively participate in small group discussions and share out.

Grading: Grading in this course is on a straight point scale so in theory, every person could earn an A! You are not competing with each other for grades, so work together!

	Points	
Lecture Participation	100	Letter grades are assigned as follows: 90-100: A 80-89: B 70-79: C 60-69: D Below 60: F
Pre-Lab Quizzes	60	
In-Class Quizzes	240	
Lab Notebook	50	
Professionalism	50	
Writing Assignments	400	
Final	100	
Total	1000	

Late Work Policy: Pre-lab quizzes will automatically close when the lab begins and late submissions will not be accepted. Writing assignments turned in after the first 10 minutes of lab, but still within section, will have a 10% deduction. Assignments turned in within 24 hours of the due date will have a 20% deduction. After 24 hours, late assignments will not be accepted. If you experience extenuating circumstances (e.g., you are hospitalized) that prohibit you from submitting your assignments on time, please let me know as soon as possible. I will evaluate these instances on a case-by-case basis.

Disability Access: Students requesting accommodations for this course due to a disability must provide a current Authorization for Accommodation (AFA) letter issued by the Office for Students with Disabilities (OSD) which is located in University Center 202 behind Center Hall. Students are required to present their AFA letters to Faculty (please make arrangements to contact me privately) and to the OSD Liaison in the department in advance so that accommodations may be arranged.

Contact the OSD for further information:

858.534.4382 (phone) osd@ucsd.edu(email)

<http://disabilities.ucsd.edu>(website)

Title IX Compliance: The University recognizes the inherent dignity of all individuals and promotes respect for all people. Sexual misconduct, physical and/or psychological abuse will NOT be tolerated. If you have been the victim of sexual misconduct, physical and/or psychological abuse, we encourage you to report this matter promptly. As a member of

this community, I am interested in promoting a safe and healthy environment, and should I learn of any sexual misconduct, physical and/or psychological abuse, I must report the matter to the Title IX Coordinator. If you want to speak confidentially you may contact the Counseling Center.

The Office for the Prevention of Harassment & Discrimination (OPHD) provides assistance to students, faculty, and staff regarding reports of bias, harassment, and discrimination. OPHD is the UC San Diego Title IX office. Title IX of the Education Amendments of 1972 is the federal law that prohibits sex discrimination in educational institutions that are recipients of federal funds. Students have the right to an educational environment that is free from harassment and discrimination.

Students have options for reporting incidents of sexual violence and sexual harassment. Sexual violence includes sexual assault, dating violence, domestic violence, and stalking. Information about reporting options may be obtained at OPHD at (858) 534-8298, ophd@ucsd.edu or <http://ophd.ucsd.edu>. Students may receive confidential assistance at CARE at the Sexual Assault Resource Center at (858) 534-5793, sarc@ucsd.edu or <http://care.ucsd.edu> or Counseling and Psychological Services (CAPS) at (858) 534-3755 or <http://caps.ucsd.edu>.

Students may feel more comfortable discussing their particular concern with a trusted employee. This may be a student affairs staff member, a department Chair, a faculty member or other University official. These individuals have an obligation to report incidents of sexual violence and sexual harassment to OPHD. This does not necessarily mean that a formal complaint will be filed. If you find yourself in an uncomfortable situation, ask for help.

Academic Integrity: Students are expected to do their own work, as outlined in the UCSD Policy on Academic Integrity. Cheating and plagiarism will not be tolerated, and I will fail any student caught engaging in academic dishonesty. All exams will be closed-book and closed-notes, so all personal materials must be stowed under your seat. Any student caught cheating on an exam will receive a failing grade for the course. Lab assignments must be written in your own words and will be submitted through Turnitin. Plagiarism of any kind will not be tolerated and will result in a failing grade. If you are unsure of what constitutes plagiarism it is your responsibility to seek out clarifying information. The UCSD library website has a series of modules around plagiarism that can be found [here](#).