

# Virology

**BIMM 114**

**Spring 2017**

**Instructor:** Cindy Gustafson-Brown (Dr. Gus)

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email: [cgb@ucsd.edu](mailto:cgb@ucsd.edu) (Put **BIMM 114** in the subject line!)

office hours: Tues 12:35-1:25, HSS 1145L

Please present your questions about course material in person during office hours, not by email. I cannot guarantee an answer to your email, unless it is an urgent issue.

## **Course description**

An introduction to eukaryotic virology, with emphasis on animal virus systems. Topics discussed include the molecular structure of viruses; the multiplication strategies of the major virus families; and viral latency, persistence, and oncology.

## **Prerequisite**

BIMM 100 (Molecular biology)

## **Reading**

The required textbook is *Fundamentals of Molecular Virology, 2nd edition* by Nicholas Acheson. Mandatory reading assignments, indicated on the schedule, are associated with every lecture. **The reading assignments should be completed before the corresponding lecture.** This will enhance your ability to successfully answer clicker questions. It will also contribute significantly to your understanding of the lecture, even if you did not understand all the material the first time you read it. Do not be discouraged. It is normal for new understandings to develop over multiple exposures to any novel material. Research in psychology has shown that students who read before coming to lectures gain far more from the lecture than those who do not.

There will be several (approximately 6) additional reading assignments from outside sources, such as *Scientific American*. These will be posted on TED by the end of week 1 and announced in class. Some of these will be discussed in your sections.

## **Classroom etiquette**

Because this is a large lecture class, minimizing distractions is important. Please have respect for your classmates and the instructor by silencing cell phones and other electronic devices, not talking, and minimizing other distracting activities in class.

## **Podcast**

This course will be available at [podcast.ucsd.edu](http://podcast.ucsd.edu)

## Sections

In discussion sections you will review course material, discuss a paper which complements the lectures or view a film. There will also be four 15-minute **quizzes** in sections, dates to be announced. You may **ONLY** take your quiz in the section in which you are enrolled. Do not ask to take a quiz in a different section; they are all full. The full schedule of activities in section will be posted on TED by the end of week 1. *There will be no sections or office hours until Tues, April 11.*

A01	Tues	8-8:50 AM	CENTR 217B	Rashini Jayaratne	<a href="mailto:rrjayara@ucsd.edu">rrjayara@ucsd.edu</a>
A02	Wed	5-5:50 PM	CENTR 217B	Yeara Jo	<a href="mailto:yejo@ucsd.edu">yejo@ucsd.edu</a>
A03	Wed	1-1:50 PM	CENTR 217B	Yeara Jo	<a href="mailto:yejo@ucsd.edu">yejo@ucsd.edu</a>
A04	Thu	2-2:50 PM	CENTR 217B	Rashini Jayaratne	<a href="mailto:rrjayara@ucsd.edu">rrjayara@ucsd.edu</a>
A05	Thu	3-3:50 PM	CENTR 217B	Rashini Jayaratne	<a href="mailto:rrjayara@ucsd.edu">rrjayara@ucsd.edu</a>

## IA office hours

Rashini Jayaratne	Monday	5-6 PM	BRF2 lobby
Yeara Jo	Friday	2-3 PM	location TBA

## iClickers

You may start earning points by answering iClicker questions on **Thurs, April 6**, in lecture. Your iClicker **MUST** be registered on TED in order for your responses to be assigned to you. Points available:

35 points for participation  
15 points for accurate answers  
50 points total = 5% of your grade.

### iClicker Participation Points (35 points)

In order to receive these points each day, you must respond to 80% of the questions in that lecture. It does NOT matter if your answer is correct.

There are different numbers of questions each day, so you may use the table below to determine how many times you must respond for participation credit a given day.

total questions	7	6	5	4	3	2	1
required responses	6	5	4	4	3	2	1

### **Q. How many days will we have clicker questions?**

Probably ~16 days.

### **Q. How do I get the participation points each day?**

You must answer 80% of the questions posed that day. The number of questions will vary from lecture to lecture.

**Q. How many days will I have to be present to qualify for full participation points?**

You get two free absences without penalty. Full credit will be allocated if you click in every day except two.

**Q. If my battery fails, or I forget my clicker, but I do attend the class, do I get participation for that day?**

No. You are allowed 2 “permitted” absences – so you don’t have to ask me about making up the missed days. We don’t have to negotiate credit; you can still get all 35 participation points from the remaining days attended.

**Q. If I only attend a few lectures, will I get any participation points?**

Yes, you can still get points each day if you answer 80% of the questions that day.

**iClicker Accuracy Points** (15 points)

You may receive additional credit for answering questions correctly.

There are different numbers of questions during each lecture. Every question is graded individually, even if it is a repeated question (e.g. asked before and after group discussion). The total number of questions over the quarter is unpredictable, and will only be known when the quarter ends.

If you correctly answer 70% of the total questions in a quarter, you will receive the full 15 points possible for accuracy.

Here is a hypothetical example: IF there are 100 questions total in a quarter, you must answer 70 questions correctly to receive the maximum credit of 15 points. In that case, you will receive  $15 \text{ pt}/70 \text{ Q} = 0.214$  points per question up to a maximum of 15 points.

This is NOT all or nothing. You get credit for as many as you answer correctly, up to 15 points.

**Q. If my battery fails, or I forget my clicker, but I do attend the class, do I get accuracy points for that day?**

No. You only need to get 70% of the questions correct in order to get full credit.

Please do not ask about making up missed days. We don’t have to negotiate credit; you can still get all 15 points from the remaining days attended.

**Additional iClicker information**

**Q. What kind of clicker should I buy and where can I get it?**

The iClicker, preferably version 2, although the regular iClicker works too. You can get one at the UCSD bookstore.

**Q. Can I share a clicker with another student?**

No! If you are found to be using another student’s clicker, or if another student is using your clicker, you will both receive a failing grade in the class, and will be referred to the Office of Academic Integrity for administrative discipline.

**Q. Will the clicker results be posted on TED?**

No. You may keep track of your own results each day. The clicker questions are posted at the end of each day on TED, with the lecture slides. The answers to the questions are revealed in class.

### **Q. What is my best strategy for getting all the points?**

Do your reading in advance, show up for as many lectures as possible, stay awake, and PARTICIPATE!

### **Films**

There will be three films that will be required viewing in this course. One will be shown in section. The other two will be viewed on your own time. Links to these will be posted in a “films” folder on TED by the end of week 1. (There may also be links to some additional films provided purely for your own interest, but not required.)

Films will be available online, streaming from library reserves or directly from the producer’s web site. When accessing films through UCSD library reserves, you *must* access the films from within the UCSD protected network, or use a VPN if you are off campus.

### **Exams**

Note that the midterms will be held in the evening, outside of normal class hours:

- Thursday, April 27, 8-9:50
- Thursday, May 25, 8-9:30

Check your calendar now to ensure you do not have a scheduling conflict. There will be no alternate exam times possible.

The exams will be closed-notes/closed-book, primarily short answer, with a few true/false, multiple choice, and possibly short essay questions. You will be accountable for **all material covered in lecture, assigned films, assigned textbook reading (even if not covered in lecture), and assigned papers.** The final exam will be comprehensive, with emphasis on the last third of the course.

Your handwriting must be legible; we will disregard answers which cannot be deciphered. *BRING STUDENT ID.* It will be checked at the exam.

IA’s will conduct a **review session** during normal lecture time on the day of each midterm. There will also be a review session the evening before the final exam.

A couple of **old exams** will be posted, for you to see the style.

**Review sheets** will be posted on TED before each exam.

Graded midterms will be available in the hallway of HSS 1145 (if you sign the waiver). Note that the external doors are locked after business hours. Graded final exams may be viewed by appointment with Dr. Gus, but may not be taken home.

### **Missed exams**

There are NO alternate exams. Put the exams on your schedule, including the evening midterms. Make sure your schedule has NO exam conflicts, including the final exam!

If you must miss an exam due to an unavoidable emergency (e.g. serious illness), you **must contact the instructor within 24 hours** of the missed exam to determine if you are eligible for a make-up exam. You will be required to provide official documentation. Without such documentation there will not be a make-up, and you will receive a failing grade for that exam. Do not ask to reschedule an exam for any reason other than a *dire emergency*. Make-up exams are decided case-by-case. They *may* be an oral or essay exam.

## **Regrades**

Only quizzes/midterms written in non-erasable pen will be considered for a regrade, and white-out may not be present on such exams. If an error has been made in the grading of your quiz or exam, you may submit it to Dr. Gus for a regrade *within 3 days* of when they are returned. Do not go to a IA for a regrade, although you should have one of them explain the answer to you before you come to me. Your quiz/exam must be submitted with a *written* description of the grading error. I will not entertain discussions of such appeals before they are made in writing. I will consider *no more than three* “potential” errors per exam. If you submit an exam for a regrade, I may choose to regrade the entire quiz/exam. If I think the IA was too generous, for the sake of accuracy I reserve the right to *lower* your score. Finally, it is critical that you *read the key* before submitting your regrade. It will be posted on the web site when the graded exams are distributed.

## **Course grade**

This course will be graded on a curve. The class mean will be at the B-/C+ boundary.

Clicker participation	3.5%
Clicker: correct answers	1.5%
Four quizzes	12%
Midterm 1	20%
Midterm 2	20%
Final exam	43%

This is a competitive course. The instructor must be completely fair to ALL students in the class and cannot under any circumstance give special consideration to an individual student. You will receive the grade that you have earned with no exceptions. There are always students who just miss a higher grade at each cutoff score (usually ~23% of the class is within 1% of the next grade). Grades cannot be changed for individual students for any reason. If you have what you consider extraordinary circumstances that deserve special consideration, then you should contact an academic advisor in your college.

## **Academic integrity**

Students are expected to do their own work, as outlined in the UCSD Policy on Academic Integrity. Cheating will not be tolerated, and I may 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. Only exams written in nonerasable pen will be considered for regades. Exams will be photocopied for comparison with submitted regades. Because all quizzes and exams are required for satisfactory completion of this course, any student caught cheating on a quiz or exam will receive a failing grade for the course. He/she may also be suspended from UCSD.

## **How can I succeed in BIMM 114?**

1. **Read** the assigned pages before lecture. You will understand the lectures better. You will earn more points and learn more from the clicker questions. The lecture will be based upon the reading, but there will not be enough time to cover every detail in class. Nevertheless, you are accountable for all reading on the exams.

**Keep up with the reading.** Pace yourself with the reading schedule. If you bump into material that is too technically challenging, *don't get bogged down*. Skip it (temporarily). Return to the most difficult material later.

2. **Outline** the important points as you read. This will help you remember the flow of information and contextualize the details. Use index cards, or a notebook, to summarize the important points.
3. **Look up words** you don't understand in the glossary, a dictionary, or online.
4. **Come** to class and sit toward the front. Participate in clicker questions and discussion.
5. **Listen** to podcast.
6. **Review** your notes within 24 hours of the lecture.  
Even more effective: rewrite (outline) your notes within 24 hour of the lecture.  
There will be material presented in lecture that is not in the textbook. You are accountable for all lecture material.
7. **Review** the PowerPoint slides with your lecture notes. PowerPoint slides will NOT contain the instructor's notes. They will contain announcements, illustrations, diagrams, and photos which augment the lecture. They will be posted after each lecture. You are accountable for everything in the PowerPoint slides.
8. **Study** a little bit every day, or a few times per week. Repetition over time is the key to retaining information. Your goal is to establish new neural pathways in your memory and fire them often! Cramming does not accomplish this.
9. **Study** with other students, and choose those who are serious about academics. Make up questions and quiz each other. Anticipate potential exam questions. This is a strategy that has been demonstrated to increase student learning.
10. **Go** to your discussion section. There will be opportunities to review the material, ask questions, and possibly take practice quizzes.
11. **Go** to the office hours of the IA's and the instructor. This will encourage you to review the material, in order to have questions to discuss.
12. **Go** to the review sessions.
13. Utilize any **study aids** provided on the course web site.
14. If you are having academic difficulty, OASIS may help. They provide tutoring, as well as classes in study skills and time management. <http://oasis.ucsd.edu/>
15. If you are having personal difficulties, do not hesitate to seek help at Counseling and Psychological Services (which is free to students). They can help you get over many types of hurdles. <http://caps.ucsd.edu/>

Their self-help library of resources covers many relevant topics, and can be accessed at <http://caps.ucsd.edu/selfhelp.html>

## Tentative Class Schedule

Date	Session	Topic	Relevant reading*
Ap 4	1	Introduction, history	pg 2-9, 312-313
Ap 6	2	Structure	pg 18-27
Ap 11	3	Classification	pg 31-40
Ap 13	4	Start Methods	pg 9-11
Ap 18	5	Finish Methods, Start replication cycle	} pg 11-16, 26-29, and chap 4
Ap 20	6	Continue replication cycle	
Ap 25	7	Finish replication cycle	
Ap 27	8	Review session during lecture - Midterm 1 at 8-9:50 PM	
May 2	9	Papillomavirus	chap 22
May 4	10	Herpesvirus	chap 24
May 9	11	Poxvirus	chap 26
May 11	12	Picornavirus	chap 11
May 16	13	Flavivirus	chap 12
May 18	14	Filovirus	chap 16
May 23	15	Orthomyxovirus	chap 18
May 25	16	Review session during lecture - Midterm 2 at 8-9:50 PM	
May 30	17	Reovirus	chap 19
Jun 1	18	Retroviruses: HIV	chap 28, 29
Jun 6	19	Hepadnavirus	chap 30
Jun 8	20	Vaccines	chap 35
Jun 13	--	Final Exam (11:30-2:30 PM)	

\* Readings in *Fundamentals of Molecular Virology*, Nicholas Acheson (2011)  
There will be copies on reserve at the Biomedical Library.

Additional **required** reading, beyond the textbook, will be posted on the course web site.