# VIROLOGY BIMM 114
# SPRING 2013

Course Organizer, Professor Elina Zuniga

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**1) GOALS OF THE COURSE:**

Viruses interfere with normal cellular processes and are responsible for numerous human illnesses and millions of deaths annually worldwide. Some of the most feared, widespread and devastating human diseases such as smallpox, influenza, poliomyelitis, yellow fever, measles and AIDS (Acquired immunodeficiency syndrome) are caused by viruses. Similarly, viruses cause a number of recently emerging diseases, including Lassa and Ebola hemorrhagic fevers, severe acute respiratory syndrome (SARS), West Nile infection and influenza pandemics. In addition, viruses also infect animals, plants and insects of importance to humans and they can cause destruction of agriculture and animals with tremendous consequences for the world economy and environment. During this quarter, we will explore the complex biology of viruses, their life cycle and pathogenesis, how they evade the immune system and how they often disable or kill their host. We will cover general principles of viral infections as well as specifics of viral families with emphasis on individual viruses that have changed human history, are currently major health burden and/or represent a serious threat for mankind.

**2) COURSE WEBSITE:**

http://classes.biology.ucsd.edu/bimm114.SP13

Username: bimm114sp13

Password: viruses

**3) PREREQUISITES:** BIMM100 (Molecular Biology), and their prerequisites. If a prerequisite has been waived to allow you to take this class, it is your personal responsibility to make up any deficiencies that you may have.

**4) OFFICE HOURS WITH DR ZUNIGA:** Thursday from 4-5 pm in 3146 on the 3rd floor of Bonner Hall, except the first week of class and when there has been a quiz/exam that day. I would be happy to talk with you about the class, virology in general, science and your studies.

**5) LECTURES:**

**Tuesdays and Thursdays 12:30-1:50 PM Center Hall 101**. Lectures will provide information not contained in the reading and are important to get a perspective on which are the most important aspects of each topic that will be evaluated in the exams. Please note that the indicated schedule and readings may be modified somewhat during the quarter, and any changes will be announced in lecture. While lecture slides will be posted on the class website before the class, these notes are **not** intended to replace lecture, and there will be material presented in class that does not appear in the lecture slides. You will be responsible for information provided in lecture in addition to the material assigned in the text.

**6) TEXT BOOK:**

**FUNDAMENTALS OF MOLECULAR VIROLOGY**, Second Edition by Nicholas Acheson. The textbook is mandatory, there will be reading in it associated with every lecture. Reading assignments are noted on the schedule. **You are strongly encouraged to read text material *before* lectures.** Further reading material (e.g. scientific commentary) will be indicated in Website and announce in class as corresponds.

**7) FILMS:**

All films shown in lecture or in section will be available for viewing online, streaming from the library. Links will be added under the corresponding lectures in the Website. You *must* access the films from a UCSD computer or use a VPN if you are off campus. If you are prompted for a username, then you are off campus and are not using a VPN. If you have problems click on the links for help. Films are also available for viewing at the Arts Library in the basement of Geisel Library.

**8) I-CLICKER:**

To enrich your learning experience through class participation I will use i-clicker in lectures. I>clicker is a response system that allows you to respond to questions I pose during class. You are required to purchase an i>clicker remote (available in bookstore) and register it online for in-class participation. We will start using clicker the first week but points will begin counting on the third lecture (APRIL 9$^{TH}$) and thereafter. PLEASE REGISTER YOUR I-CLICKER BEFORE APRIL 9$^{TH}$.

**How I-clicker answers will be graded?** You will be graded on participation. You will earn one point per lecture only if you respond to ALL BUT ONE QUESTION, regardless of how they are responded (correct and incorrect answers will count the same). THE POINT IS EARNED FOR THE OVERALL LECTURE NOT INDIVIDUAL QUESTIONS. You will get NO point if you miss more than one question during the lecture. The i-clicker points earned during the course will count for up to 5% of your final grade.

**How do I register my i-clicker?** Each clicker has a unique serial number on the back of the remote. Write down the number and place a piece of scotch tape over that bar code and ID to preserve it. In order to receive credit for your votes, YOU WILL NEED TO REGISTER YOUR I>CLICKER REMOTE ONLINE. You must have come to class at least once and voted on at least one question in order to complete this registration properly. Once you have voted in a question in my class, go to www.iclicker.com/registration. Complete the fields with your first name, last name, student ID and remote ID. **Your student ID should be your ucsd ID number (e.g. A08449435**). The remote ID is the series of numbers and sometimes letters found on the bottom of the back of your i>clicker remote.

**9) TEACHING ASSISTANTS:** **OFFICE HOURS:**

| NAME | EMAIL | OFFICE HOURS | PLACE |
|---|---|---|---|
| Ikrenyi, Pavel | pikrenyi@ucsd.edu | Fri- 2:30-3:30 PM | Muir Biology 2165 |
| Luallen, Robert J. | rluallen@ucsd.edu | Tue- 2-3 PM | TBA |
| Mack, Lauren Aliyah | lmack@ucsd.edu | Fri- 9-10 AM | Rogers |

**10) DISCUSSION SECTIONS:**

| SECTION | DAY & TIME | | LOCATION | | TA |
|---|---|---|---|---|---|
| A01 | M | 1:00p - 1:50p | CENTR | 220 | Robert Luallen |
| A03 | M | 5:00p - 5:50p | CENTR | 205 | Lauren Mack |
| A04 | M | 6:00p - 6:50p | CENTR | 205 | Lauren Mack |
| A06 | M | 8:00p - 8:50p | CENTR | 205 | Pavel Ikrenyi |
| A07 | W | 5:00p - 5:50p | CENTR | 205 | Robert Luallen |
| A08 | F | 4:00p - 4:50p | CENTR | 207 | Pavel Ikrenyi |

Discussion sections are a valuable part of this course, and although discussion sections are not mandatory, I highly recommend that you take part in them. These sections serve to clarify, emphasize and expand points that have been introduced in lecture. The section leaders craft each meeting to include opportunities for problem-solving, discussion, and expansion on particularly timely topics.

There will be no sections or office hours the first week of class. Sections will begin on April 8th, you may chose to attend any section you like.

**11) REVIEW SESSIONS:** The TAs will hold 2 h review sessions on the Saturdays before the midterm and the final exams. Final times and locations to be announced in class and on the website.

**12) EVALUATIONS:** Your performance in the course will be evaluated by **1 quiz, 1 midterm exam and the final exam.**

Exams will consist of fill in the blank, short answer, multiple choice, and short essay questions. Pens, a #2 pencil and an ID card (student ID or driver's license) will be required at every exam. There are no scheduled make-up exams. Failure to take the exam will result in a zero. Extraordinary circumstances preventing you from taking an exam must be discussed in advance with the Student Affairs Office (1128 Pacific Hall) and Dr. Zuniga. IF exceptions are made for special circumstances (after documentation is provided), the make-up will be an ORAL exam given by Dr. Zuniga. There will be only one final given. Unfortunately it is impossible to accommodate those with multiple finals on the same day.

**Quiz:** worth 5% of your grade. It will cover all material covered and reading material assigned for lectures 1-5.

**Midterm:** worth 30% of your grade. It will cover all material covered in class in addition to reading and visual material assigned for lectures 1-8.

**Final:** 60% of your grade. Covering ALL lectures and reading or visual material assigned during the entire course with emphasis on lectures 10-20.

**i>clicker:** worth 5% of your grade. I estimate that we will use I-clicker in about 15 lectures. Thus, I-clicker participation per each lecture will be worth approximately 0.33 % of your grade (5% maximum divided 15 lectures=0.33% per lecture).

There will be NO written material allowed for reference during any of the exams.

**13) GRADING:** The grading will be normalized in a curve. 60-70% will be a D, 70-80% will be a C, 80-90% will be a B and 90-105% an A.

**14) REGRADE POLICY:** Exams must be written in pen ONLY (no pencil) or will not be accepted for regrade. Exams written in pen but having writing masked by any form of white-out or correction tape will not be accepted for regrade. To submit a request for a regrade, you must:

**i.** Write a cover letter specifying which specific problem should be looked at and fully describe why you think the problem was wrongly graded.

**ii.** Include your email address in your cover letter so that I can contact you if necessary.

**iii.** Attach the cover letter to the exam and deliver to Dr. Zuniga after lecture. The regrade request must be delivered within 1 week after the graded exams are returned.

**iv.** Please be advised that a random sampling of exams will be photocopied. If exams submitted for regrade are found to be altered, this will be considered a breach in academic honesty and will result in failure of the course.

**15) EMAIL COMMUNICATION:** eizuniga@ucsd.edu is the appropriate email for all correspondence. Please remember to include your first and last name in the body of the email and WRITE BIM 114 IN E-MAIL SUBJECT (your e-mail will be directed to my junk box if you do not write that). I will not respond to any questions regarding the content of the exams by email or answer lengthy questions on course material, or schedule a meeting with `you or anything else that can be done in person before/after class or during office hours. I will address questions about the course material during office hours.

**16) LECTURE NOTES:** The lecture slides will be posted on the website before the lecture. It is your responsibility to keep track of last minutes changes in the slides. Students are required to have access to the internet in order to obtain class information (syllabus, TA sections) and materials (problem sets). Information available on the website will not be handed out in class.

**17) THE LEARNING ENVIRONMENT:** Participation in class (e.g. questions or responses to questions by the instructor) is strongly encouraged and contributes to a rich, interactive learning environment. Please refrain from eating, reading newspapers, scanning the web, and engaging in conversations during lectures and sections. Cell phones, pagers, and messaging devices should be turned off. If you must leave class early, please sit in the back in an aisle seat so that you do not disturb others. Following these guidelines will help you, your colleagues, and instructors to stay focused on the material.

**18) ACADEMIC INTEGRITY:** Work on exams must be solely your own. Cheating will not be tolerated and will result in an F in the course, as well as any additional disciplinary actions as indicated by the policy to maintain academic honesty. Please note, letting someone cheat off of your exam is cheating!!

Please review UCSD's Policy on Academic Integrity:

http://www-senate.ucsd.edu/manual/appendices/app2.htm#AP14

**19) SCHEDULE FOR LECTURES, EXAMS AND READING MATERIAL**

| DATE | SESSION | TENTATIVE TOPIC | ASSIGNED READING |
|---|---|---|---|
| **April 2** | **1** | **Introduction & history** | **Chap 1 [pages(p) 2-8]** |
| **April 4** | **2** | **Methods & Structure** | **Cap 1 (p9-11) & Chap 2 (p18-25)** |
| **April 9** | **3** | **Classification** | **Chap 3 (p31-40)** |
| **April 11** | **4** | **Life Cycle part I** | **Chap 1 (p11-16) & Chap 2 (p26-29)** |
| **April 16** | **5** | **Life Cycle part II** | **Chap 4** |
| **April 18** | **6** | **Film: Rx for Survival, 1: Disease Warriors & QUIZZ (Covering Lectures #1-5)** | |
| **April 23** | **7** | **Host Defense (part 1)** | **Chap 33** |
| **April 25** | **8** | **Host Defense (part 2)** | **Chap 34** |
| **April 30** | **9** | **MIDTERM (Covering Lectures #1-8)** | |

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|---|---|---|---|
| May 2 | 10 | Bacteriophage T7 | Chap 7 |
| May 7 | 11 | DNA viruses: Herpesviruses (by Dr Spector) | Chap 24 |
| May 9 | 12 | DNA viruses: Papilloma, Adeno & others | Chap 22&23 |
| May 14 | 13 | DNA viruses: Poxviruses & others | Chap 26 |
| May 16 | 14 | +ssRNA viruses: Picorna, Flavi & others | Chap 11&12 |
| May 21 | 15 | -ssRNA viruses: Paramyxo, Filo & others | Chap 15&16 |
| May 23 | 16 | -ssRNA viruses: Orthomyxo & Arenaviruses | Chap 18 |
| May 28 | 17 | dsRNA: Reoviruses | Chap 19 |
| May 30 | 18 | Retroviruses | Chap 28&29 |
| June 4 | 19 | Hepadnaviruses & Prions | Chap 30&32 |
| June 6 | 20 | Strategies to combat viral infections | Chap 35 |
| Monday June 10 | | Final Exam (Covering ALL lectures with emphasis on Lectures #10-20) 11:30 AM - 2:30 PM | |