

## Biology 220 Microbiology

### Basic Course Information

Semester	<b>Spring 2020</b>	Instructor Name	<b>Eddie Chang</b>
Course Title & #	<b>BIOL 220, Microbiology</b>	Email	<a href="mailto:eddie.chang@imperial.edu">eddie.chang@imperial.edu</a> or <a href="mailto:changedh@gmail.com">changedh@gmail.com</a>
CRN #	<b>10046, 10047, 10048</b>	Webpage	<b>See below</b>
Room	<b>2712</b>	Office	<b>2778</b>
Class Dates	<b>8.24-12.11.20</b>	Office Hours	<b>See below for times; all hours via conferzoom</b>
Class Days	<b>Asynchronous/TBA</b>	Office Phone #	<b>760-355-6301</b>
Class Times	<b>Asynchronous/TBA</b>	Office contact if student will be out or emergency	<b>Sylvia Murray, SME secretary, 760-355-6155 sylvia.murray@imperial.edu</b>
Units	<b>5</b>		

Office Hours (subject to change), effective Monday, August 31, 2020: Monday and Thursday 430p-530p; Tuesday and Wednesday 3-4pm; also by arrangement (email me to set up the day and time. I am not available Mondays from 230-4p due to meetings)

All office hours via zoom (link to be posted on class website). You can also email me during office hours instead of using zoom (though it's probably easier for me to explain things or for you to see them by zoom).

### Course Description

Course provides students with fundamental concepts of the structure and physiology of non-disease and disease producing microorganisms with particular attention to bacteria. Basic techniques for culturing, staining, counting and identifying microorganisms. Designed to meet the requirement to enter one of the medical fields as well as general education.

### Student Learning Outcomes

satisfactory completion of the class entails the ability to do the following:

1. Accurately explain the basic principles of microbiology, which include but are not limited to: structure, features and functions of prokaryotic and eukaryotic cells; bacterial/molecular genetics; microbial metabolism; pathogenesis; virology and immunology (ISLO 1,2)
2. Devise a dichotomous key to aid in the identification of disease-causing bacteria in the lab, and accurately identify disease cause-bacteria by using the key and experimental techniques (ISLO 1, 2).
3. Perform standard experimental techniques in microbiology such as gram stain and streak plate correctly to test hypotheses, determine characteristics of microbes and perform diagnostics. (ISLO 2)
4. Apply lecture and laboratory concepts with critical thinking to explain experimental data and scenarios in microbiology not addressed directly in lecture/laboratory (ISLO 1, 2)
5. Fully participate in classroom and laboratory activities (ISLO 3).

### Course Objectives

1. The student will list and describe the major historical events in the field of microbiology and the people and experiments involved.

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2. The student will also describe different schemes of classification and utilize them to classify and identify microorganisms.
3. The student will describe the general morphology of microorganisms and explain their associated cellular physiology.
4. The student will recognize and apply various techniques and factors necessary for optimum growth of different microorganisms.
5. Student will differentiate among methods of producing pure cultures and describe cultural characteristics of microorganisms.
6. The student will describe enzyme structure and explain enzyme function, regulation, and measurement of activity.
7. The student will describe and explain the various biochemical reactions and pathways of metabolism.
8. The student will describe the various means of inheritance and recombination in microorganisms and explain the results of various genetic situations. The student will describe technique of recombinant DNA.
9. The student will describe death and death-rate determination in microorganisms and explain the effects of various physical and chemical agents on microorganisms.
10. The student will describe chemotherapeutics including antibiotics and will explain the action of antibiotics in microorganisms including measurement of activity.
11. The student will describe the normal microbial flora of the human and explain the infection process and the host's defensive response.
12. The student will explain the theory of common diagnostic techniques and describe their usage.
13. The student will describe the epidemiology and the various modes of transmission of infectious diseases.
14. The student will list and describe the cause, symptoms, prognosis, and treatment of selected human diseases caused by bacteria, viruses and other microbes.

### **Textbooks & Class website**

Optional Texts- I do highly suggest that you get them since they will make the class go more easily, but I will not make them mandatory.

1. *Microbiology, An Introduction*. By Tortora, Funke and Case, 13th ed or later. Pearson-Cummings (may use any edition from the 10<sup>th</sup> onwards)
2. Lab Manual- *Microbiology, Laboratory, Theory and Application*. By Michael Leboeffe and Burton Pierce (Brief Edition). 3rd edition. Morton Publishing Co. (may use 2<sup>nd</sup> edition as well)

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**Course website:** go to [www.imperial.edu](http://www.imperial.edu). Click on the “For Students” tab. Once you click on the home tab, a list of other tabs will then appear—now click on the “canvas” tab and you can now log onto canvas. Once you log in, you’ll see the list of courses you’re registered for and simply click on the course you’re taking for me (eg, BIOL 220 CRN#^\*%+) and you’re in!

The website contains all instructional materials for this class including the syllabus, lecture slides, videos of the actual lectures, assignments, review guides and announcements/reminders. Please check the website often for updates. Feel free to view and download the materials on the site.

The materials on the website are organized in Modules. Each Module covers 1-2 lecture chapters or laboratory activities/techniques. I will go over the modules and website in a zoom meeting for the entire class or via a video recording that I will post on the website.

### Course Requirements and Instructional Methods

- This class is conducted online. All lectures, activities, assignments, quizzes and exams, as well as the resources/materials needed for the class, will be posted on the course website accessible from Canvas (see class website in the sections immediately above this one).
- Students are also expected to complete all assignments, take all exams, participate in all online activities including class wide zoom meetings.
- The materials and the activities of the class are organized in Modules, with each module covering 1-2 lecture chapters and/or at least 2. laboratory activities/techniques. The modules are organized either topically (for example by chapter(s)) or chronologically (for example, all materials and activities covered in a 1-2 week period are placed in the same module). Each module also includes an introductory page which lists and describes the lectures, activities, discussions and assignments etc in the module as well as the order in which the student should perform the activities (for example, watch the videos of the lectures in the module first, then do assignment #1, then do lab activity, then watch the lab video on how to interpret your lab results, then participate in the discussion, then do the review assignment). The introductory page of each module may also give you tips on how to complete the module- so please read it before working on the module.
- While the student can work on the items in the module according to his/her own pace, she/he must complete the module chapters/lab activities by the date specified on the schedule. Each assignment, discussion or lab activity in the module also has its own specific due date. Students MUST complete items by the due date.

**Out of Class Assignments:** The Department of Education policy states that one (1) credit hour is the amount of student work that reasonably approximates not less than one hour of class time and two (2) hours of out-of-class time per week over the span of a semester. WASC has adopted a similar requirement.

### What if I need to borrow technology or access to WIFI?

1. To request a loaner laptop, MYFI device, or other electronic device, please submit your request here (cut and paste the link into your server/navigator such as chrome: <https://imperial.edu/students/student-equity-and-achievement/>)
2. If you’d like access the WIFI at the IVC campus, you can park in parking lots "I & J". Students must log into the IVC student WIFI by using their IVC email and password. The parking lots will be open Monday through Friday from 8:00 a.m. to 7:00 p.m.

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### Guidelines for using parking WIFI:

- Park in every other space (empty space BETWEEN vehicles)
- Must have facemask available
- For best reception park near buildings
- Only park at marked student spaces
- Only owners of a valid disabled placard may use disabled parking spaces
- Only members of the same household in each vehicle
- Occupants **MUST** remain in vehicles
- Restrooms and other on-campus services not available
- College campus safety will monitor the parking lot
- Student code of conduct and all other parking guidelines are in effect
- Please do not leave any trash behind
- No parking permit required**

If you have any questions about using parking WIFI, please call Student Affairs at 760- 355-6455.

### **Course Grading Based on Course Objectives**

I do NOT “hand out” grades. You earn your grade!!! Your grade is the result of what YOU do.

your grade is based on both Lecture and Laboratory. **Do NOT miss any lecture or lab sessions.** If you miss 4 or more instructional sessions (**lecture and/or lab**), you may be dropped from the course. If you cannot make it to class due to illness or emergency, please contact me **ASAP!!!!**

Your overall grade is based on the following:

1. Four lecture exams=400pts total. **If you are a DSPS student, please inform me ASAP and remember to submit the forms at least 1week before EACH exam (including the final) so I can make the proper accommodations in a timely manner.**
2. Assignments, Discussions, Worksheets, etc in each module. The number of points and due dates for each are specified on each item in the module. These are worth anything from 3-30 points
3. “Adapt a bacterium” assignment- more on this later in the semester (points TBA)
4. Laboratory “activities”: consists of laboratory activities in the module. These laboratory activities include, but are not restricted to, doing online simulations of lab projects and techniques, viewing videos of how to perform lab techniques and

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interpret results of laboratory tests, examining experimental results online and completing laboratory worksheets that require the student to organize and interpret experimental results viewed online.

5. one or two laboratory quiz(zes)- between 25-40 points each

Grading Scale: The student's semester grade will be determined by the total number of points the student has earned in the items listed above. The points are then divided by the total number of points possible for all the items to get a “percentage score.” I do **NOT** “curve” exam scores or overall grades

A=90.0% of total points

B=80.0% “

C=70.0% “

D=60.0% “

F <60.0% “

I also **do not “round off.”** If you get 79.8% it's 79.8% (C), NOT 80% (B)

Make up Policy: **A student may take a make up a quiz or exam for the following reasons:**

1. Medical reasons – student's or immediate family member's illness.
2. Legal reasons – student is required to be in court.
3. Family tragedy/emergency – e.g. death in the family.

Make up exam must be taken within 10 CALENDAR days of the originally scheduled date, if not the student will receive a “0” for that exam or quiz.

### Attendance

- A student who fails to attend the first meeting of a class or does not complete the first mandatory activity of an online class will be dropped by the instructor as of the first official meeting of that class. Should readmission be desired, the student's status will be the same as that of any other student who desires to add a class. It is the student's responsibility to drop or officially withdraw from the class. See General Catalog for details.
- Regular attendance in all classes is expected of all students. A student whose continuous, unexcused absences exceed the number of hours the class is scheduled to meet per week may be dropped. **For online courses, students who fail to complete required activities for two consecutive weeks may be considered to have excessive absences and may be dropped.**
- Absences attributed to the representation of the college at officially approved events (conferences, contests, and field trips) will be counted as ‘excused’ absences.

**What does it mean to “attend” an online class?** Logging onto Canvas alone is NOT adequate to demonstrate academic attendance by the student!!

Attendance is critical to student success and for IVC to use federal aid funds. Acceptable indications of attendance are:

- Student submission of an academic assignment
- Student submission of an exam
- Student participation in an instructor-led Zoom conference
- Documented student interaction with class postings, such as an interactive tutorial or computer-assisted instruction via modules
- A posting by the student showing the student's participation in an assignment created by the instructor
- A posting by the student in a discussion forum showing the student's participation in an online discussion about academic matters
- An email from the student or other documentation showing that the student has initiated contact with a faculty member to ask a question about an academic subject studied in the course.

### Online Netiquette

What is netiquette? Netiquette is internet manners, online etiquette, and digital etiquette all rolled into one word. Basically, netiquette is a set of rules for behaving properly online.

- Students are to comply with the following rules of netiquette: (1) identify yourself, (2) include a subject line, (3) avoid sarcasm, (4) respect others' opinions and privacy, (5) acknowledge and return messages promptly, (6) copy with caution, (7) do not spam or junk mail, (8) be concise, (9) use appropriate language, (10) use appropriate emoticons (emotional icons) to help convey meaning, and (11) use appropriate intensifiers to help convey meaning [do not use ALL CAPS or multiple exclamation marks (!!!!)].

### How am I expected to act in an online “classroom” (especially Zoom)?

Attending a virtual meeting can be a challenge when there are many students on one conference call. Participating in such meetings may count as class attendance, but disruptive behavior may also result in you not being admitted to future meetings. Follow the tips below for best results:

#### 1) Be RESPECTFUL

- a. Your written, verbal, and non-verbal communications should be respectful and focused on the learning topics of the class.

#### 2) Find a QUIET LOCATION & SILENCE YOUR PHONE (if zooming)

- a. People walking around and pets barking can be a distraction.

#### 3) EAT AT A DIFFERENT TIME.

- a. Crunching food or chugging drinks is distracting for others.

b. Synchronous zoom times are set in advance so reserve meals for outside class meetings.

**4) ADJUST YOUR LIGHTING SO THAT OTHERS CAN SEE YOU**

a. It is hard to see you in dim lighting so find a location with light.

b. If your back is to a bright window, you will be what is called “backlit” and not only is it hard on the eyes (glare) but you look like a silhouette.

**5) POSITION THE CAMERA SO THAT YOUR FACE AND EYES ARE SHOWING**

a. If you are using the camera, show your face; it helps others see your non-verbal cues.

b. You may be at home, but meeting in pajamas or shirtless is not appropriate so dress suitably. Comb your hair, clean your teeth, fix your clothes, etc. before your meeting time to show self-respect and respect for others.

**6) Be READY TO LEARN AND PAY ATTENTION**

a. Catch up on other emails or other work later.

b. If you are Zooming, silence your phone and put it away.

c. If you are in a room with a TV – turn it off.

**7) USE YOUR MUTE BUTTON WHEN IN LOUD PLACES OR FOR DISTRACTIONS**

a. Pets barking, children crying, sneezing, coughing, etc. can happen unexpectedly. It’s best if you conference in a private space, but if you can’t find a quiet place, when noises arise **MUTE** your laptop.

**8) REMEMBER TO UNMUTE WHEN SPEAKING**

a. Follow your instructor’s directions about using the “**raise hand**” icon or chat function to be recognized and to speak, but make sure you have unmuted your device.

b. Do not speak when someone else is speaking.

**9) REMAIN FOCUSED AND PARTICIPATE IN THE MEETING**

a. Especially when the camera is on YOU, we can all see your actions. Engage in the meeting. Look at the camera. Listen to instruction. Answer questions when asked.

b. Do not use the Zoom meeting to meet with your peers or put on a “show” for them.

**10) PAUSE YOUR VIDEO IF MOVING OR DOING SOMETHING DISTRACTING**

Emergencies happen. If you need to leave the room or get up and move about, stop your video.

**Classroom Etiquette**

- **Electronic Devices:** Cell phones and electronic devices must be turned off and put away during class. Absolutely **NO TEXTING** or other online activities are allowed during the lecture or laboratory sessions. **If you use any electronic devices during an exam, your exam score will be reduced by 50%.**
- **Food and Drink are prohibited** in all classrooms. Water bottles with lids/caps are the only exception. Additional restrictions will apply in labs. Please comply as directed.

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- Disruptive Students: Students who disrupt or interfere with a class may be sent out of the room and told to meet with the Campus Disciplinary Officer before returning to continue with coursework. Disciplinary procedures will be followed as outlined in the General Catalog.

If your disruptive behavior delays the progress of the class- **you OWE me time**. We will stay in class beyond the end of class so we can make up for time lost due to your disruptive behavior. Also, if we are unable to cover the material in class due to disruptions on your part, you will STILL be responsible for it on the exam.

- Children in the classroom: Due to college rules and state laws, no one who is not enrolled in the class may attend, including children.

### • **How do I act differently if I have an on-ground class during COVID?**

- 1. DO NOT COME TO CAMPUS OR ATTEND AN OFF-CAMPUS CLASS IF YOU FEEL SICK, HAVE A FEVER, OR HAVE A COUGH**
  - a. Even if your symptoms are mild, stay home.
  - b. Email your instructor to explain why you are missing class.
  - c. [If you are sick with COVID-19 or think you might have COVID-19](#), provides CDC guidance.
  - d. If you have tested positive for COVID-19, you must self-quarantine for 14 days and then be without symptoms for at least 72 hours. Clearance is required prior to returning to any face-to-face interaction. It is recommended that you undergo a final COVID-19 test to confirm that you are no longer infected.
  - e. If you are exposed through direct contact with a person known to be COVID-19 positive, then you must submit negative COVID-19 test results prior to returning to any face-to-face interaction.
- 2. ARRIVE AT CAMPUS EARLY (at least 15 minutes early is advised).**
  - a. All people entering the IVC campus will need to pass a screening process, which will occur at the gates as your drive onto campus. You will need to take a short questionnaire and get your temperature taken (the screening is completely touchless and will take place while you remain in your car).
- 3. BRING A MASK TO CLASS (and always wear it).**
  - a. Be sure that your mask covers both your nose and mouth. If your mask is cloth, then wash it each day. If your mask is disposable, then use a new one each day.
- 4. GO DIRECTLY TO YOUR CLASSROOM.**
  - a. The IVC campus is mostly closed so you should not visit other areas or seek any face-to-face services. Services are available to students online and can be accessed through [www.imperial.edu](http://www.imperial.edu).
- 5. WASH YOUR HANDS FREQUENTLY (and use the provided sanitation supplies).**
  - a. Your classroom is equipped with cleaning supplies. Use them as needed.
- 6. BE SURE TO SOCIAL DISTANCE (stay at least 6 feet from other).**
  - a. The number of students in a classroom at any one time is very limited so you have plenty of space to spread and ensure that you stay at least 6 feet from others.
- 7. BRING YOUR OWN FOOD AND DRINKS.**
  - a. There is no food service currently offered on campus.

**Academic Honesty- in other word, NO CHEATING allowed**



### How do I show academic honesty and integrity in an online “classroom”?

- **KEEP YOUR PASSWORDS CONFIDENTIAL.**
  - You have a unique password to access online software like Canvas. Never allow someone else to log-in to your account.
- **COMPLETE YOUR OWN COURSEWORK.**
  - When you register for an online class and log-in to Canvas, you do so with the understanding that you will produce your own work, take your own exams, and will do so without the assistance of others (unless directed by the instructor).

### Examples of Academic Dishonesty that can occur in an online environment:

- Copying from others on a quiz, test, examination, or assignment;
  - Allowing someone else to copy your answers on a quiz, test, exam, or assignment;
  - Having someone else take an exam or quiz for you;
  - Conferring with others during a test or quiz (if the instructor didn't explicitly say it was a group project, then he/she expects you to do the work without conferring with others);
  - Buying or using a term paper or research paper from an internet source or other company or taking any work of another, even with permission, and presenting the work as your own;
  - Excessive revising or editing by others that substantially alters your final work;
  - Sharing information that allows other students an advantage on an exam (such as telling a peer what to expect on a make-up exam or prepping a student for a test in another section of the same class);
  - Taking and using the words, work, or ideas of others and presenting any of these as your own work is plagiarism. This applies to all work generated by another, whether it be oral, written, or artistic work. Plagiarism may either be deliberate or unintentional.
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- Plagiarism is to take and present as one's own the writings or ideas of others, without citing the source. You should understand the concept of plagiarism and keep it in mind when taking exams and preparing written materials. If you do not understand how to correctly 'cite a source', you must ask for help.
  - Cheating is defined as fraud, deceit, or dishonesty in an academic assignment or using or attempting to use materials, or assisting others in using materials, or assisting others in using materials, which are prohibited or inappropriate in the context of the academic assignment in question.

Anyone caught cheating or will receive a zero (0) on the exam or assignment, and the instructor may report the incident to the Campus Disciplinary Officer, who may place related documentation in a file. Repeated acts of cheating may result in an F in the course and/or disciplinary action. Please refer to the General School Catalog for more information on academic dishonesty or other misconduct. Acts of cheating include, but are not limited to the following: (a) plagiarism; (b) copying or attempting to copy from others during an examination or on an assignment ;(c) communicating test information with another person during an examination; (d) allowing others to do an assignment or portion of an assignment, (e) use of a commercial term paper service

### Additional Services and campus resources

- In-class/embedded tutor: will go over in class
- Learning Labs: There are several 'labs' on campus to assist you through the use of computers, tutors, or a combination. Please consult your college map for the Math Lab, Reading & Writing Lab, and Learning Services (library). Please speak to the instructor about labs unique to your specific program
- Library Services/tutoring center: There is more to our library than just books. You have access to tutors in the learning center, study rooms for small groups, and online access to a wealth of resources.

### How do I access services now that we are mostly online? (continues next page)...

- CANVAS LMS. Canvas is Imperial Valley College's Learning Management System. To log onto Canvas, use this link: [Canvas Student Login](#). The [Canvas Student Guides Site](#) provides a variety of support available to students 24 hours per day. Additionally, a 24/7 Canvas Support Hotline is available for students to use: 877-893-9853.
- Learning Services. In order to accommodate students and maximize student success during the COVID-19 Pandemic, all tutoring support is being provided through one Zoom link ([IVC online Tutoring](#)). When campus is open again, there are several learning labs to assist students. Whether you need support using computers, or you need a tutor, please consult your [Campus Map](#) for the [Math Lab](#); [Reading, Writing & Language Labs](#); and the [Study Skills Center](#).
- Library Services. Visit the Spencer Library's page on the IVC website for a wealth of valuable resources and online access to databases, e-books and more. Contact us so we can help you with instructional and research development skills (for those conducting research and writing academic papers). When campus re-opens, students also have access to tutoring services in the Study Skills Center as well as private study rooms for small study groups. There is more to our library than just books!
- Career Services Center. The Career Services Center is dedicated to serve all IVC students and Alumni. Services include Career Assessments, Resume and Cover Letter Assistance, Interview Preparation, Internship Opportunities and Job Placement.
- Child Development Center. The Preschool and Infant/Toddler Centers are on-campus demonstration lab programs that meet the educational, research, and service needs of the institution and community at large. The Preschool program (children three to five years of age) and the Infant/Toddler program (newborn to three years of age) is in buildings 2200 and 2300. Service is available to families who meet the California Department of Education qualifications for enrollment. The centers are open during COVID from Monday-Friday 7:15-5:30. Breakfast, lunch and snack are provided through the California Adult and Child Food Program. Location: Buildings 2200 and 2300. Phone: (760) 355-6528 or (760) 355-6232. Application: <https://forms.imperial.edu/view.php?id=150958>

### Disabled Student Programs and Services (DSPS)

Any student with a documented disability who may need educational accommodations should notify the instructor or the Disabled Student Programs and Services (DSP&S) office as soon as possible. The DSP&S office is located in Building 2100, telephone 760-355-6313 if you feel you need to be evaluated for educational accommodations. Please submit test proctoring forms to me at least 1 week before an exam so I can make the proper accommodations/arrangements with DSPS in a timely manner.

### Student Counseling and Health Services

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Students have counseling and health services available, provided by the pre-paid Student Health Fee. We now also have a fulltime mental health counselor. For information see <http://www.imperial.edu/students/student-health-center/>. The IVC Student Health Center is located in the Health Science building in Room 2109, telephone 760-355-6310.

### **Student Rights and Responsibilities**

Students have the right to experience a positive learning environment and due process. For further information regarding student rights and responsibilities please refer to the IVC General Catalog available online at

[http://www.imperial.edu/index.php?option=com\\_docman&task=doc\\_download&gid=4516&Itemid=762](http://www.imperial.edu/index.php?option=com_docman&task=doc_download&gid=4516&Itemid=762)

### **Veteran's Center**

The mission of the **IVC Military and Veteran Success Center** is to provide a holistic approach to serving military/veteran students in three key areas: 1) Academics, 2) Health and Wellness, and 3) Camaraderie. The Center also serves as a central hub that connects military/veteran students, as well as their families, to campus and community resources. The goal is to ensure a seamless transition from military to civilian life. When campus reopens, the Center is in Building 600 (Office 624), telephone 760-355-6141.

### **Extended Opportunity Program and Services (EOPS)**

The Extended Opportunity Program and Services (EOPS) offers services such as priority registration, book grants, transportation assistance, individualized counseling, tutoring, and community referrals to eligible students. Our staff is available to assist and support students in navigating personal, psychological, academic, and/or career-related issues through empathy, cultural-competence, and a commitment to equity and social justice. Also under the umbrella of EOPS is the CARE (Cooperative Agency Resources for Education) Program, designed to serve single parents and assist with addressing issues that are particular to this population. Students that are single parents receiving TANF/Cash Aid assistance may qualify for our CARE program. For additional information about the EOPS or CARE Programs please contact our Program Office 760.335-6407 and/or visit our Program website [www.imperial.edu/students/eops](http://www.imperial.edu/students/eops) for eligibility criteria and application procedures. We look forward to serving you! - EOPS/CARE Staff

### **Student Equity Program**

The Student Equity & Achievement Program strives to improve Imperial Valley College's success outcomes, particularly for students who have been historically underrepresented and underserved. The college identifies strategies to monitor and address equity issues, making efforts to mitigate any disproportionate impact on student success and achievement. Our institutional data provides insight surrounding student populations who historically, are not fully represented. SEA addresses disparities and/or disproportionate impact in student success across disaggregated student equity groups including gender, ethnicity, disability status, financial need, LGBTQIA+, Veterans, foster youth, homelessness, and formerly incarcerated students. The SEA Program also houses IVC's Homeless Liaison, Foster Youth Liaison, Formerly Incarcerated Liaison, and Military Affiliated Liaison, who provide direct services and referrals to students in need. SEA strives to empower students experiencing insecurities related to food, housing, transportation, textbooks, and shower access. We recognize that students who struggle meeting their basic needs are also at an academic and economic disadvantage, creating barriers to academic success and wellness. We strive to remove barriers that affect IVC students' access to

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enrollment, education, degree and certificate completion, and the ability to transfer to a university. SEA also provides outreach at local Imperial County high schools to ensure graduating seniors are successfully matriculated into the college and have a strong support system. Please visit us online for assistance at <https://imperial.edu/students/student-equity-and-achievement/> or call us at 760-355-6465 or when campus reopens, visit Building 401.

### What if I cannot afford food, books, or need other help?

We have many resources that are available to you. Please tell us what you need by submitting your request(s) here: <https://imperial.edu/students/student-equity-and-achievement/>

### Information Literacy

Imperial Valley College is dedicated to help students skillfully discover, evaluate, and use information from all sources. Students can access tutorials at <http://www.imperial.edu/courses-and-programs/divisions/arts-and-letters/library-department/info-lit-tutorials/>

### Anticipated Class Schedule / Calendar

Tentative Schedule-subject to changed due to instructor discretion and/or circumstances in the class.

WK	DATE	LECTURE topics	LABORATORY TOPICS: experiment numbers ("ex 1-") are those found in third edition of lab manual
1	8-24	<b>Module 1- Ch1 introduction to microbiology and review of basic biology; Ch2: chemistry/biomolecules</b>	None
2	8-31	Finish Module 1 (Ch 2) ; start ch4 by latter part of the week	<b>None</b>
3	9-7	<b>Ch4</b>	Fun experiment- handwashing and sanitisers and Lab safety (labster simulation)
4	9-14	Ch 10-11 survey of bacteria; Ch 14-15 how bacteria cause disease; <b>Assign adapt a bacterium assignment</b> (due 10-14)	Look at result of fun experiment Introduction to gram stain video; gram stain (labster simulation)

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5	9-21	Finish up ch 14-15 Start ch5 bacterial metabolism (lecture part 1-3: overview and enzymes)  <b><u>Exam 1: ch 1, 2, 4, 10-11</u></b>	<b><u>Video on media, growing bacteria in lab and basic lab techniques/aseptic transfer techniques:</u></b> ex 1-4, 1-5
6	9-28	Ch 5- bacterial metabolism (lecture parts 3 or 4-end: how cells obtain energy from food and the sun) Ch6- microbial growth	Using aseptc techniques: fermentation based tests  [Ex 5-2Fermentation/phenol red broth, ex 5-3 mrvp, ex 5-7citrate]
7	10-5	Finish Ch 6; Ch7- controlling bacterial growth; Ch 8 genetics (parts 1-2 structure of DNA)	Using aseptic technique: [respiration related tests- ex5-4 catalase, ex5-5 oxidase, ex5-6 nitrate]  [oxygen test/requirements (ex2-6)-using TG and deeps]
8	10-12	Ch8- genetics (lecture parts 3-6 or 7: replication and expression of DNA)  Adapt a bacterium due assignment due by 10-14	[ferm and sel/diff med msa mac emb]  [labster simulation: bact isolation- cover basic techniques 1-2 weeks before]
9	10-19	<b>Ch8-lecture parts 6 or 7-10 finish expression/start mutation to end of chapter)</b>	[Amino acid metabolism tests: <u>5-12</u> urease/urea hydrolysis, <u>5-8</u> decarboxylase, <u>5-9</u> deaminase tests, ex 5-18 SIM media tests]
10	10-26	Ch13 viruses  <b><u>Exam 2; ch 5-7, 14-15</u></b>	<b>Bacterial identification (labster simulation)</b>
11	11-2	<b>Ch13: viruses</b>  <b><u>lab quiz-</u> on all labs except labster simulations and fun experiment</b>	<b>Bacterial identification (labster simulation)</b>

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12	11-9	Finish Ch13; Ch 16 innate defences	<b>Finish Bacterial identification (labster simulation)</b>
13	11-16	Ch 17-19 immune system  <b><u>Exam 3: ch 8,13</u></b>	
<b><i>Week of 11-23 to 11-29 Thanksgiving Break!!!</i></b>			
14	11-30	Ch 17-19; CH 20- antimicrobial drugs	antibiotics lab
15	12-7	<b>Finish Ch 20 and review for final exam (ch 16-20)</b>  final exam (ch16-20) held on 12-10 or 12-11 (exact date to be announced either right before or soon after Thanksgiving break)	

## **Lab Syllabus**

Lab activities are online as well. The materials needed for lab are found the modules portion of the course website.

Lab activities include watching videos explaining the application/usage of laboratory techniques (tests), how they are done and how to interpret the results. After watching the video to learn the techniques or tests, you will look at data/results posted on the website (module) and you will interpret the data by answering questions on the slides showing the data or on worksheets about the experiment.

You will also do several simulations of experiments online. These simulations allow you to use what you learned in the lecture and lab. These simulations allow you to “do” some of the techniques you will learn. I will show you how to do the simulations when the time comes.

Please take notes of what you do in lab. for example, you can take notes on the data and your interpretation (and how the data is interpreted), as well as how the experiments/techniques are done. This will help you with the lab activities and review for the lab quiz.

There is no format for taking notes for the lab other than (1) take these notes in ink (2) if you make a mistake, cross it out instead of using white out before you make the correction (3) take the notes for lab in a separate notebook and don't tear out any pages.

