**Course Information**

Spring Semester – 2018 Course Duration - 18 weeks Dates: 01/16/2018 - 05/24/2018

Course Websites: [www.scientistcindy.com](http://www.scientistcindy.com) and canvas

**\*This course consists of both a Lecture component and a Lab component.**

**You must attend both the lecture and lab in order to successfully complete this course.**

BIO 270 LECTURE **CRN 3480 - Section 70**

Days: Tuesdays

Time 5:30 pm – 6:20 pm

Location: HLS 134

BIO 270 LECTURE **CRN 3482 - Section 71**

Days: Tuesdays

Time 5:30 pm – 6:20 pm

Location: HLS 134

**Instructor Information**

Instructor: Cynthia Anderson Sanchez email: [CySanchez@sbccd.cc.ca.us](mailto:CySanchez@sbccd.cc.ca.us)

Office Location: TBA Office Hours: by appointment

**Required Texts**

**REQUIRED TEXT: FREE**

Microbiology by OpenStax Download Available at

<https://d3bxy9euw4e147.cloudfront.net/oscms-prodcms/media/documents/Microbiology-OP.pdf>

**SUPPLEMENTAL TEXT: optional**

**Fundamentals of Microbiology** pdf Download Available at

<https://ia801609.us.archive.org/12/items/AlcamosFundamentalsOfMicrobiology-PommervilleJ.2010/AlcamosFundamentalsOfMicrobiology-PommervilleJ.2010.pdf>

Download link also available online on CANVAS and on the Course Website at [www.scientistcindy.com](http://www.scientistcindy.com)

And

**SUPPLEMENTAL TEXT: optional**

**Fssentials of Microbiology** pdf Download Available at

<http://www.grsmu.by/files/file/university/cafedry/microbiologii-virysologii-immynologii/files/essential_microbiology.pdf> Download link also available online on CANVAS and on the Course Website at [www.scientistcindy.com](http://www.scientistcindy.com)

**Required Lab Manual**

**REQUIRED TEXT:** FREE San Bernardino Valley College Microbiology Laboratory Manual

Download link available online on CANVAS and on the Course Website at [www.scientistcindy.com](http://www.scientistcindy.com)

**Course Catalog Description**

**T**his course is a formal introduction to the principles of microbiology and immunology.

The pathogenesis of and immunity to infectious diseases are discussed.

**Required Materials**

1. SCANTRONS: You will need a total of 4 scantrons SCANTRON #882-E for in-class Midterm Exams and the Final Exam
2. LAB. MANUAL: Benson's Microbiology Application by Alfred E. Brown; Short Version, any edition
3. LAB COAT OR APRON - At times, we will be working with living organisms as well as using various stains and dyes. Students should have a lab coat to protect themselves and their clothing. For safety reasons, all students must wear closed toe shoes and long pants. Individuals with long hair will be required to pull their hair back. Gloves will be provided only when necessary. If you wish to where gloves at all times you must provide your own.
4. ACCESS TO THE CANVAS WEB-SITE AND E-MAIL: Because I will use the Canvas web-site to post pertinent information for the class, including details about lecture and lab activities as well as posting assignments, students must be able to access the web-site. I will also use this web-site to contact students via e-mail for relevant announcements. In the event that you don’t have access to the web-site at home, there are computers in the library that have internet access. With respect to an e-mail account, students can get a “free” e-mail address from the campus. Should you have problems accessing Canvas or student e-mail, call the help desk at (909) 384-4357.

**Course Description**

This course is a comprehensive survey of microbiology designed for Pre-nursing majors, Health Science majors, and Pre-professional students. Note : This is a HYBRID class. This means that there are both on-campus and online Internet activities required. To participate in this class you must attend all scheduled on-campus classes and have access to a computer that has a reliable internet connection. Students should access http://online.valleycollege.edu during the week prior to the semester start date. All information regarding this class, including course-specific technology requirements, will be found on that webpage. **YOU MUST ATTEND THE LAB YOU ARE REGISTERED IN.**

**Student Learning Outcome (SLOs):**

Definition: behavioral objective that describes what a student will be able to do or know at the conclusion of a course. At the conclusion of this course you should be able to do the following:

* Students will learn the 5 kingdoms of life.
* Be able to:
  + differentiate eukaryotic and prokaryotic cells and their structures
  + illustrate viral structure and replication
  + identify pathways in microbial metabolism
  + illustrate DNA replication and protein synthesis in eukaryotes and prokaryotes
  + understand the basics of the host immune response
* Students will be able to critically evaluate a patient’s clinical scenario by applying information learned in the medical microbiology section of lecture.
* Students will be able to apply methods to
  + aseptic technique
  + use of the microscope
  + control of microbial growth
* Use morphological, cultural, and physiological data to produce a dichotomous flow chart.

**GRADING**

**Assessment: Students will be assessed by responses to embedded**

**questions in lecture and laboratory quizzes.**

**FINAL POINT DETERMINATION for LECTURE:**

Quizzes On-Line 10 @ 10pts each= 100 points

Midterms 3 @ 100 pts each = 300 points

Final Exam 1 @ 200 pts = 200 points

**TOTAL possible points for Lecture: = 600**

**FINAL POINT DETERMINATION for LAB:**

Lab Exam 3 @ 100pts each = 300 points

Other Assignments / Assessments ­­­­­­ ­­­­ = 100 points­

**TOTAL possible points for Lab: 400**

**TOTAL possible points for the Course = 1000 Points**

**Grading scale: based on 1000 total possible points**

90 – 100 = A 900 - 1000 pts = A

80 – 89 = B 800 – 899 pts = B

70 – 79 = C 700 – 799 pts = C

60 – 69 = D 600 – 699 pts = D

– 59 = F 0 - 599 pts = F

GRADING POLICY: One final grade will be given for the class and it is determined by the points earned in both the lecture and the lab portions of the class. The lecture portion will count for approximately 60% of the grade and the lab as 40%. Note: A minimum of a C for the lab is required in order to pass the course [i.e. seventy percent of the lab points (280 points out of 400) must be achieved in order to pass the class.] Grades will be based on the following ranges:

MIDTERMS and FINAL EXAMS: There will be 3 in-class midterms and 1 in-class final exam. Lecture examinations will primarily include objective-type questions (ie. true/false, multiple choice, matching). There will also be questions in an essay format, fill-ins, problem solving and/or definitions - covering material from the lectures, laboratories, and readings/assignments. You will need a total of 4 “green” (E882) scantron answer sheets. These will require the use of a #2 pencil

LABS: Lab quizzes and assignments will be on previous lab exercise’s and will be unannounced and must be completed before the end of the lab they are given. There are no make-ups of lab quizzes and assignments. Labs are an extremely important part of this class and cannot be “made-up”. Any make-up lecture exams will be in essay format and must be approved by the instructor prior to the date of the exam (where possible and granted on a “case-by-case” basis) and only with documented proof of the reason for the absence (e.g. physicians note). Lastly, students with 2 consecutive or total of three absences will be dropped.

ON-LINE ASSIGNMENTS During this course you are required to do weekly on-line work. You will use the CANVAS Website, my Website [www.scientistcindy.com](http://www.scientistcindy.com) , and my You Tube page <https://www.youtube.com/user/scientistcindy> . My website and the You Tube websites are compatible with all smart phones, tablets and computers. You will have a weekly on-line assignment most weeks in this course.

STUDENTS WITH DISABILITIES: If you require accommodation for a disability in order to participate in this class, please let me know ASAP and also contact Disables Student Programs and Services (DSPS) AD/SS105, (909) 384-4440.

ACADEMIC HONESTY:

Per San Bernardino Valley College’s policy: A student who cheats may be assigned an academic penalty grade at the discretion of the instructor. The minimum penalty would result in a zero for the exam or assignment in which academic honesty is suspected. The penalty may range from lowering the student’s grade to assigning a failing grade for the course and further academic discipline by Academic Affairs….

RESOURCES: Below is a list of what I consider to be beginning points for accessing Microbiology-specific information. It is not meant to be all-inclusive; it is a starting point for your "surfing".

* MY WEBSITE! [www.scientistcindy.com](http://www.scientistcindy.com)
* American Society for Microbiology : :http://www.asm.org/
* Science Journal: http://www.sciencemag.org
* Nature Journal: http://www.nature.com
* Medline Search: <http://ncbi.nlm.nih.gov/PubMed/medline.html>

STUDENT SUCCESS:

1. Spend an average of ten to twenty hours a week outside class working on the course. This will vary based on your background and the topic being covered. Because a vast amount of information is covered in this course, one must review daily in order to keep up with the topics.
2. Attendance at lectures is essential for success. Students who chronically miss lecture NEVER do well in my courses. There is no substitute for the lectures.
3. Do not take sketchy notes. In fact, recording the lectures is a convenient way to insure you have the entire lecture as well as giving you a chance to review the lecture outside of class.
4. Read the textbook. Ideally, read the chapter before class to be able to follow the lecture.
5. Read the lab notes prior to attending the lab. Although there may be modifications of the protocol or different microbes may be used, the description in the lab notes are very close to what will be done in the lab.
6. Feel free to ask questions during class. In addition, you will have ample opportunities to review lecture material in the lab period.

**LECTURE SCHEDULE**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Week | Date | In Class Lecture and Supp. Reading | On Line Topics and Supp. Reading | | | Reading  OpenStax | On Line Assignments |
| 1 | Tue.  January 16th | The History of Microbiology  Fund. Of Bio Chapter 1 | -Introduction to Microbiology  Supp. Chapter 1 and 2 | | | Chapters 1 - 3 | No Quiz |
| 2 | Tue.  January 23rd | Prokaryotic Cells  ESS. Of Bio Chapter 3 pgs 51 -64 and  Pgs 163 -169 | Eukaryotic Cells  Chapter 3  pgs 65 -71 | | | Chapters 4 and 5 | On-line Quiz 1  Due by Tuesday January 30th no later than 5:29 pm |
| 3 | Tue.  January 30th | Naming and Classifications ESS. Of Bio pgs 157 – 162 | Cell Division in Eukaryotes vs. Prokaryotes ESS. Of Bio Chapter 3 pgs 72 - 75 | | | Chapter 4 and 5 | On-line Quiz 2  Due by Tuesday February 6th no later than 5:29 pm |
| 4 | Tue.  February 6th | Microbial Nutrition  ESS. Of Bio Chapter 4  pgs 77 – 82 | Microbial Cultures  ESS. Of Bio Chapter 4  pgs 83 – 103 | | | Chapter 9 | On-line Quiz 3  Due by Tuesday February 13th no later than 5:29 pm |
| 5 | Tue.  February 13th | Microbial Growth  ESS. Of Bio Chapter 5 | Microbial Growth (cont.) ESS. Of Bio Chapter 5 | | | Chapter 13 | No Quiz |
| 6 | **Tue.**  **February 20th** | **Midterm I** | Microbial Metabolism:  Energy and Enzymes  ESS. Of Bio Chapter 6 pgs - 109 - 127 | | | Chapter 7 and 8 | On-line Quiz 4  Due by Tuesday February 27th no later than 5:29 pm |
| 7 | Tue.  February 27th | Microbial Metabolism:  Glycolysis, TCA Cycle, and the Glyoxylate Cycle,  ESS. Of Bio Chapter 6 pgs - 118 - 127 | Microbial Metabolism:  the ETC and fermentation. ESS. Of Bio Chapter 6 pgs 132 - 136 | | | Chapter 8 | On-line Quiz 5    Due by Tuesday March 6th no later than 5:29 pm​ |
| 8 | Tue.  March 6th | Microbial Metabolism:  Metabolism of lipids and proteins, Anaerobic respiration and Oxidation of Inorganic Molecules,  ESS. Of Bio Chapter 6 pgs. - 136 - 154 | Microbial Metabolism:  Aerobic Respiration, Photosynthesis and  Anabolic Reactions (cont.)  ESS. Of Bio Chapter 6 pgs. - 136 - 154 | | | Chapter 11 and 12 | No Quiz |
|  | **Tue.**  **March 12th** | **SPRING BREAK** | | | | |  |
| 9 | Tue.  March 20th | **MIDTERM II** | | Genetics:  DNA Replication, Transcription / Translation  ESS. Of Bio Chapter 11 pgs. 266 - 284 | Chapter 10 and 11 | | On-line Quiz 6    Due by Tuesday March 27th no later than 5:29 pm​ |
| 10 | Tue.  March 27th | Genetics: Regulation  ESS. Of Bio Chapter 11 pgs. 285 - 299 | | Genetics: DNA Tech. And Conj. ESS. Of Bio  Chapter 11 pgs. 299 - 312 | Chapter 10 and 11 | |  |
| 11 | Tue.  April 17th | Microbial Genetic: Genetic Engineering  ESS. Of Bio Chapter 12 | Microbial Genetic: Genetic Engineering (cont.) ESS. Of Bio  Chapter 12 | | | Chapter 10 and 11 | No Quiz |
| 12 | Tue.  April 24th | **MIDTERM III** | Infection and  Disease  Fund. Of Mic. Chapter 19 and 21 | | | Chapter 15 and 16 | On-line Quiz 7    Due by Tuesday April 17th no later than 5:29 pm |
| 13 | Tue.  April 3rd | Resistance and the  Immune System: Innate Immunity  Fund. Of Mic. Chapter 20 | Resistance and the  Immune System: Acquired  Immunity  Fund. Of Mic. Chapter 21 | | | Chapter 17 and 18 | On-line Quiz 8    Due by Tuesday April 24th no later than 5:29 pm |
| 14 | **Tue.**  **April 10th** | **NO CLASS / FLEX DAY / CAMPUS CLOSED** | Resistance and the  Immune System: Acquired  Immunity  Fund. Of Mic. (cont.)  Chapter 21 | | | Chapter 18 | On-line Quiz 9    Due by Tuesday April 31st no later than 5:29 pm |
| 15 | Tue.  April 31st | Control of Microorganisms and Antimicrobial Agents  ESS. Of Bio. Chapter 13 and 14 | Viral Diseases  Fund. Of Mic. Chapter 15 - 16 | | | Chapter 13  and 14 | No Quiz |
| 16 | Tue.  May 8th | Viruses  Fund. Of Mic. Chapter 14 | Prokaryotic Diseases  Fund. Of Mic. Chapter 10 - 13 | | | Chapter 25 and 26 | On-line Quiz 10    Due by Tuesday May 14th no later than 5:29 pm |
| 17 | Tue.  May 14th | Eukaryotic Diseases  Fund. Of Mic. Chapter 18 | Eukaryotic Diseases  Fund. Of Mic. Chapter 17 | | | Chapter 25 and 26 | Study for the Final Exam |
| Finals Week | Tuesday May 22nd |

**IMPORTANT DATES**

**Instruction Begins. Tuesday, January 16th**

**Spring Census Day Monday, February 5th**

**Lincoln’s Birthday Friday, February 16th**

**Washington’s Birthday Monday, February 19th**

**Spring Recess Week of March 12th through the 17th**

**Flex Day (no classes in session) Tuesday, April 10th**

**Final Exams. Begin Friday May 18th though Thursday the 24th**

**Spring Semester Ends Thursday, May 24**