**Biology 31 Syllabus**

Fall 2016 Phone:638-3641 ext. 3715 Office:LFS 5

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R. Elizondo Reedley Community College

Office Hours: LFS 5 – Wed 1:00 -2:00PM and Friday 11:00-12:00

Tues and Thurs 8:30- 9:00 AM

1. Catalog Description: Microbiology, 5 units, 3 hours lecture, 6 hours lab, including classification, morphology, identification, and physiology of microorganisms. May include a field trip.
2. Pre requisites: Successful completion of Biology 1 or Biology 5 and Chemistry 1A or 3A. Recommended: Successful completion of Biology 20 and Biology 22.
3. Required Texts:
   1. Tortora, Gerard J. et al., Microbiology, 12 th Edition, 2012. Benjamin Cummings Publishing Company Inc ( Include page numbers when a book is used on the term paper).
   2. Symbiosis for Reedley College. Latest Edition. Benjamin Cummings Publishing Company. This is a custom lab manual and can only be purchased at Reedley College. Rentable lab manuals are not accepted.
4. Other required materials:
   1. White Laboratory Coat
   2. Assorted color pencils
   3. Seven scantron mini blue books (form 886)
   4. CLEAN, SHORT FINGERNAILS : NO FINGERNAIL POLISH OR ACRYLIC NAIL COVERS are required.
5. Course Objectives:
   1. To have a basic understanding of microbes as living organisms.
   2. To become familiar with laboratory techniques necessary to work with microorganisms.
   3. To understand and practice aseptic techniques.
   4. To become familiar with microbial morphology, classification, and identification.
   5. To understand the role of microorganisms in health and disease and the mechanisms used to control microbial populations.
6. Student Projects:
   1. Students will be required to complete a reading assignment. Specific details will be given to you in a separate hand out.
   2. A research paper on a subject in Microbiology, chosen by the student, will be required. Specific details will be given to you in a separate hand out. A computer assignment will be required.
7. Evaluation of Student Progress (approximation0

I reserve the right to change this with notice.

* 1. Lecture Points

1. Three midterm exams 300

2. One final examination (approx) 150

3. Lecture or lab quizzes/homework 50

4. Reading Assignment & Term Paper 130

Total Lecture Points (approx) 630

* 1. Laboratory Points

1. Three lab exams 300

2. Laboratory Quizzes 60

3. Unknowns 25

Total Laboratory Points (approx) 385

**Total Points for the Semester 1015**

* 1. Grades will be assigned on a percentage basis:

A= 100-90% B=89-80% C=79-70% D=69-60% F= < 60%

Tests cannot be made up unless arrangement is made prior to the exam or under extenuating circumstances with prior arrangement. If you plan on missing this class for 2 or more days, it may affect your overall grade and is not recommended. Do not plan on missing a week or more of this class as your grade may be lowered one letter grade. If you are late please report your tardy at the first break or end of class and it will be changed from as absence to a tardy.

* 1. Any student doing unsatisfactory work, failing, lack of participation (attitude), lack of following safety rules etc. may be dropped from the course at the discretion of the instructor. Plagiarism, in any form, will have consequences from earning a zero on an assignment to dismissal from the class.
  2. If you have a verified need for an academic accommodation or materials in alternate media (i.e., Braille, large print, electronic text, etc.) per the Americans with Disabilities Act (ADA) or Section 504 of the Rehabilitation Act, please contact me as soon as possible.
  3. Plagiarism will not be tolerated and may result in a loss of points or expulsion.

1. Attendance Policy
   1. Students are required to attend all class sections.
   2. If a student misses more than 8 class hours (lab and/or lecture)before the ninth week of class, the student may be dropped from the class.

I consider 3 tardies as an absence.

* 1. You can contact me at 638-3641 ext. 3715.
  2. Plan your schedule so that you will arrive to class on time. This is particularly important with regards to the lab as explanations and directions are given in the first 30 minutes. You are required to read the lab exercises before the lab period in which it is to be performed.
  3. No formal break period is scheduled during the lab period. If it is necessary to leave, you must leave your lab coat in the lab, wash and dry your hands, and fit this short break in to the lab work schedule so all work is completed during the allotted time.
  4. If you should decide to drop this course for any reason, it is your responsibility to make the drop official. This can be done by requesting a drop in person or by filling out the appropriate form in the admissions office. Failure to officially drop this course could result in receiving the grade of “F”. The drop deadline for this semester is\_\_\_\_\_\_\_\_\_\_\_.

1. Student Conduct in the Laboratory- Safety Handout
   1. Students are to maintain clean areas at all times. Keep unnecessary books, papers, purses, etc., off the laboratory tables.
   2. Disinfectant laboratory tables at the beginning and at the end of every lab period.
   3. Aseptic techniques are to be followed at all times.
   4. Lab coats are to be worn in the lab at all times. Students with long hair must keep it contained with pins, clips, headbands, or rubber bands, etc. so that it will not sweep across desks, Bunsen burners, and/or microscopes. Legs are to be covered at all times. Close toed-shoes and socks are to be worn at all times.
   5. Caution must be exercised in handling stains and other reagents, as they may be harmful to clothing, skin, eyes, floor, etc. Safety glasses must be worn when handling and using caustic or other dangerous chemicals. They are available in the classroom.
   6. Any spills of living organisms must be reported to your instructor **immediately!** Should a spill occur and not be reported immediately, these are grounds for removal from the class.
   7. Food and drinks are NOT allowed in the laboratory! NEVER eat or drink in the laboratory and avoid putting objects in your mouth. Some organisms used in class are potentially pathogenic or are pathogenic.
   8. Wash your hands thoroughly and dry them before you leave the laboratory.
   9. Adhere to the Reedley Community College rules of student dress and conduct.
2. “With this statement on my course syllabus, I am referring each of my enrolled students in need of academic support to tutorial services. Referral reason: Mastering the content, study skills, and basic skills of this course is aided by the use of trained peer tutors”.
3. Miscellaneous
   1. Laboratory and Field Trip Safety
      1. Follow directions in the student conduct section.
      2. Report all accidents or injuries immediately.
      3. Wear appropriate clothing as indicated and on field trips wear appropriate footwear. This would be oxford or walking shoes or leather closed toe tennis shoes.

NO SANDALS OR OPEN TOED LOOSE FOOTWEAR OR SHORTS WILL BE ALLOWED IN CLASS OR ON FIELDTRIPS. You will not be allowed in class without the appropriate attire and protective necessities (lab coat).

1. If you should experience difficulty understanding the material presented in the class or lab, please see your instructor in her office at the earliest possible date, either during scheduled office hours or by appointment.
2. If you have a verified need for an academic accommodation or material in alternate media (i.e. Braille, large print, electronic text, etc.) per the Americans with Disabilities Act (ADA) or Section 504 of the Rehabilitation Act, please contact me as soon as possible.
3. Absolutely, NO pagers, beepers, or cell phones will be allowed to ring or be used in the class. If this occurs, the student will receive a 0 for the assignment or exam. You may NOT have a pager, etc on your person during lab or an exam or a quiz.

**XI Tentative Lecture Schedule** – I reserve the right to change this schedule with notice.

Week Day Lecture Topic Reading Assignment

1 Tu Introduction – Syllabus

Th Historical Developments in Microbiology Ch 1

2 Tu Microscopes & Staining Techniques Ch 3

Th Anatomy of Bacteria Ch 4

3 Tu Microbial Growth I Ch 6

Th Microbial Growth II Ch 6

4 Tu Lecture Exam 1 – Chs: 1, 3, 4, & 6

Th Physical Control of Microbial Growth Ch 7

5 Tu Physical Control of Microbial Growth Ch 7

Th Chemical Control of Microbial Growth Ch 7

6 Tu Important Biological Molecules Ch 2

Th Microbial Metabolism I Ch 5

7 Tu Microbial Metabolism II Ch 5

Th Microbial Genetics I Ch 8

8 Tu Microbial Genetics II Ch 9

Th Classification of Microorganisms Ch 10

9 Tu Lecture Exam 2 ch. 7, 2, 5, 8, 9

Th Bacteria Ch 11

10 Tu Fungi and Protozoa Ch 12

Th Viruses I Ch 13

11 Tu Viruses II Ch 13

Th Principles of Disease and epidemiology Ch 14

12 Tu Lecture Exam 3 – Ch 10, 11, 12, 13, & List of Diseases

Th Mechanisms of Pathogenicity Ch 15

13 Tu Non-Specific Defenses of the Host I Ch 16

Th Non-Specific Defenses of the Host II Ch 16

14 Tu The Immune Response I Ch 17

Th The Immune Response II Ch 17

15 Tu The Immune Response III Ch 17

Th Microbiology of Water Ch 27

16 Tu Microbiology of Water Ch 27

Th

17 Tu

Th Final Chapters Covered – 14, 15, 16, 17, 27, 20

18 Final Examination

Chapters: 21, 22,, 23, 24, 25, & 26. Read for Content. This material will NOT be covered in lecture. You will be tested on this material in Examination 3. I would suggest that you begin reading this material at your earliest convenience. Further instructions will follow in lecture.

**XII. Tentative Laboratory Schedule**- I reserve the right to change this with notice.

Week Day Lab Exercise Reading Assignment

1 Tu Syllabus- handouts: microscopy

Th Microscopy and Aseptic Technique pg 23

2 Tu Viewing Live Organisms pg 33

Th Microscopic Measurements Handout

3 Tu Simple Staining and Media Making pg 43

Th Negative Staining pg 49

4 Tu Gram Stain pg 53

Th Acid Fast and Endospore Stains Pgs 59 & 65

5 Tu Lab Exam #1

Th Environmental Microorganisms pg 83

6 Tu Transfer of Bacteria pg 91

Th Isolation of Bacteria by Dilution

And Streak Plate Techniques pg 101

7 Tu Carbohydrate Catabolism pg 113

Th Fermentation of Carbohydrates pg 119

8 Tu Differential/Selective Media Handout

Th DNA Handout

9 Tu Protein Metabolism I & II pg 127 & 133

Th Respiration- nitrate/cat/Oxidase pg 139

10 Tu Lab Exam #2

Th Oxygen Requirements and pgs 153 & 363

And pH/Osmotic Pressure

11 Tu Physical Methods of Control: Heat pg 177

Th Ultraviolet Radiation pg 185

12 Tu Disinfectants and Antiseptics pg 191

Th Chemical Methods of Control: pg 195

Antimicrobial Drugs

13 Tu Effectiveness of Hand Scrubbing pg 203

Th Yeasts and Molds pg 253 & 259

14 Tu Protozoans HO

Th Flora of the Mouth, Throat, & Skin pgs 331, 335, 339

15 Tu Isolation of Unknowns pg 247, 390

Th Isolation of Unknowns 391

16 Tu Isolation of Unknowns/Power Point Pres.

Th Laboratory Exam #3

17 Tu Field Trip/Unknowns/Presentations

Th Unknowns/Presentations/Clean up