



**Coleman College for Health Sciences**

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**BIOL 2420 – Microbiology**

CRN 26760– Fall 2014

4 Semester hours (3 hours lecture/ 3 hours lab)/16 weeks

08/25/2014 to 12/14/2014

**Instructor:** Anjali Gaikwad M.S., MB (ASCP)

**Instructor Contact Information:** Phone: 713 718 8995  
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**Office location:** John B. Coleman Building, Suite 216 (Mon to Fri, 10a-6p)  
**Instruction (Lecture/Lab):** Tuesday and Thursday (6 to 9 pm)

*Please feel free to contact me for assistance concerning any problems that you are experiencing in this course. You do not have to wait until you have received a poor grade. Your performance in my class is very important to me. I am available to hear your concerns and to discuss course topics.*

**Course Objective:**

This course is designed to fulfill the requirement of pre-professional allied health curricula as well as meeting the requirements for physical education majors. This course may also serve as an elective to fulfill transfer requirements for certain degree programs. The course consists of study of microorganisms including morphology, metabolism, taxonomy, culture techniques, microbial genetics, immunology, bacteriology, virology, mycology, parasitology, and diseases.

**Course Description:**

To identify the morphological features of microorganisms and understand the major physiological and functional processes critical for structure, metabolism, and utilization of ecological niches. To understand the biochemical basis of important physiological characteristics of microorganisms, including pathogenicity, motility, and unique forms of energy production. To analyze/evaluate this knowledge (within the field of Microbiology) in a laboratory setting

**Materials:**

Microbiology with diseases by Taxonomy. 4<sup>th</sup> edition, by Robert Bauman  
Microbiology 5.5 edition (Lab manual for Biology 2420-HCCS) - Wiersema D and Sen P.

**General & Academic Regulations:**

1. SMOKING, EATING OR DRINKING or use of cells phones IS NOT ALLOWED IN CLASSROOMS.
2. Any student interfering with or disrupting the orderly educational processes of the classroom will be subject to dismissal from H.C.C.
3. Students require prior permission of the Instructor to leave the class (lecture or lab) early for emergency or other special circumstances.
4. The Instructor has the right to discipline students by subtracting 5-10 points from one or more tests for any disorderly conduct.
5. Class attendance is your responsibility. The Instructor will provide a sign-in sheet for every class. It is the

student's responsibility to sign the attendance sheet. A student who accumulates four (4) unexcused absences may be administratively withdrawn.

6. Absences will lower your final grade (there are points for attendance). Please arrange with your classmate(s) to collect any handouts, schedule changes etc. in order to keep abreast. Habitual tardiness will not be tolerated.

7. Since it is normally impossible to cover all of the text material during the scheduled lecture time, students will be expected to read the book sections before coming to class. It is also the student's responsibility to complete and submit the assignments on time.

8. Lecture tests will be multiple choice questions and will be based on the assigned chapters, material covered in the class and the notes. Students are encouraged to read the assigned text-book to do well in the test.

9. Students observed cheating on examinations (lecture or lab) will receive a failing grade for the entire course.

10. Lab exam will be based on a handout explaining the contents, format, etc. of the test.

11. The instructor reserves the right to modify this syllabus or the tests, and will notify the class of any changes in a timely manner.

12. Please refer to the **Student Handbook** regarding the "appropriate student conduct"

13. Any student with a documented disability (e.g. physical, learning, Psychiatric, vision, hearing etc.) who needs to arrange reasonable accommodations must contact the Disability Services Office at the beginning of each semester. Faculty is authorized to provide only the accommodations requested by the Disability Support Services Office.

### **Instructional Methods**

Instructional strategies will include classroom lectures. The class notes will be uploaded on 'Eagle' 2.0 (in PowerPoint format).

### **Student Assignments**

Students should refer to the Course Outline and Course Calendar. *They will have to complete their lab work **(on time)** and record the findings/observations in the lab book.*

### **Student Assessments**

Assessments will include hands-on lab assignments with corresponding questions concerning the pertinent chapters included in the labs. Refer to **Course Requirements, Grading Scale, and Grading Criteria** for more information.

### **Instructional Materials:**

The class notes will be available on-line (Eagle 2.0). Students can bring the printouts of the chapter for their ready reference. The instructor may distribute supplemental handouts to the student if a need arises. The HCC Coleman College library is the Houston Academy of Medicine – TMC library. It is located one mile and one METRO rail stop away at 1133 John Freeman Boulevard at Cullen Circle. Numerous reference books are available in the HAM-TMC Library. Their phone number is 713 795 4200. Library hours are Monday through Thursday 7 a.m. - 10 p.m., Friday 7 a.m. - 9 p.m., Saturday 9 a.m. - 5 p.m., and Sunday 1 p.m. - 8 p.m.

Parking is available underneath the Library in Garage 3 or Garage 4 and costs approximately \$10.00 maximum per day. For more information, go to [www.library.tmc.edu](http://www.library.tmc.edu).

Circulation Privileges: Present your student ID, current registration invoice, and registration form. The registration form can be downloaded at: <http://resource.library.tmc.edu/circ/docs/memberregisform.pdf>

Remote TMC Educational Access: Go to <http://resource.library.tmc.edu/resources/>

### **Disability Notification**

Any student with a documented disability (e.g. physical, learning, psychiatric, vision, hearing, etc.) who needs to arrange reasonable accommodations must contact the Disability Services Office at their respective college at the beginning of each semester. Faculty is authorized to provide only the accommodations requested by the Disability Support Services Office. If you have any questions, please contact the Disability Counselor at your college or the District Disability Office at 713-718-5165. Contact Dr. Raj Gupta, Coleman College ADA counselor, at 713-718-7631.

## Academic Honesty

Plagiarism, cheating, and other forms of academic dishonesty are not only violations of the college system and the rules of this class, but are unethical and unprofessional. Students engaging in any form of academic dishonesty are subject to immediate dismissal from the program. You are expected to be familiar with the College's Policy on Academic Honesty, found in the catalog and student handbook. Students are responsible for conducting themselves with honor and integrity in fulfilling course requirements. Penalties and/or disciplinary proceedings may be initiated by College System officials against a student accused of scholastic dishonesty. "Scholastic dishonesty": includes, but is not limited to, cheating on a test, plagiarism, and collusion.

**Cheating** on a test includes:

- Copying from another students' test paper;
- Using materials not authorized by the person giving the test;
- Collaborating with another student during a test without authorization;
- Knowingly using, buying, selling, stealing, transporting, or soliciting in whole or part the contents of a test that has not been administered;
- Bribing another person to obtain a test that is to be administered.

**Plagiarism** means the appropriation of another's work and the unacknowledged incorporation of that work in one's own written work offered for credit.

**Collusion** mean the unauthorized collaboration with another person in preparing written work offered for credit. Possible punishments for academic dishonesty may include a grade of 0 or F in the particular assignment, failure in the course, and/or recommendation for probation or dismissal from the College System. (See the Student Handbook).

## Student Attendance, Repeat Course Fee, Withdrawals

Students will be dropped from the course for excessive absences. Absences in excess of 12.5% of the hours of instruction are considered excessive. Students will be dropped from any course for excessive tardiness. Ten minutes late for class will be considered tardy. Three tardy's will count as one absence. Leaving class early without prior notification will be considered as absent time and will be noted.

Students are advised to communicate with the instructor about absences and tardiness. Call to inform the instructor of unexpected absences or tardiness. If a student knows in advance that he/she will be late or absent, they should notify the instructor in writing one week in advance. Absences may be excused solely at the discretion of the instructor. Students are responsible for material missed because of absences. It is the student's responsibility to schedule all makeup work.

## Repeat Course Fee

The State of Texas encourages students to complete college without having to repeat failed classes. To increase student success, students who repeat the same course more than twice, are required to pay extra tuition. The purpose of this extra tuition fee is to encourage students to pass their courses and to graduate. Effective fall 2006, HCC will charge a higher tuition rate to students registering the third or subsequent time for a course. If you are considering course withdrawal because you are not earning passing grades, confer with your instructor/counselor as early as possible about your study habits, reading and writing homework, test taking skills, attendance, course participation, and opportunities for tutoring or other assistance that might be available.

## Withdrawals:

Students are responsible for officially withdrawing from the class.

- **Students should check HCC's Academic Calendar by Term for drop/withdrawal dates and deadlines.**
- **If a student decides to drop or withdraw from a class upon careful review of other options, the student can drop online prior to the deadline through their HCC Student Service Center: <https://hccsaweb.hccs.edu:8080/psp/csprd/?cmd=login&languageCd=ENG>**

Students who fail to withdraw from a class before the due date and remain absent from the class will receive a grade of "F".

I urge any student who is contemplating withdrawing from the class to see me first! You may be doing better than you think. Either way, I want to be accessible and supportive. If you need assistance, I'm here to address your concerns.

### **Course Withdrawals-First Time Freshmen Students-Fall 2007 and Later**

Under Section 5 1.907 of the Texas Education Code “an institution of higher education may not permit a student to drop more than six courses, including any course a transfer student has dropped at another institution of higher education.” Beginning in fall 2007, the Texas Legislature passed a law limiting first time entering freshmen to no more than **SIX** total course withdrawals **throughout** their educational career in obtaining a certificate and/or degree.

### **Classroom Behavior:**

**Turn cell phones off and pagers to vibrate mode during class.** No electronic devices for recording the lecture are allowed in the class room. Attend to all personal business before the start of class (students will not be allowed to leave the classroom during a test).

**Do not work on assignments or other course work during class.** Conflicts should be brought to the attention of the instructor as soon as possible.

**Use of lap-top computers to follow instruction is accepted.** However, no other material should be open on the lap-top screen while instruction is in progress. The instructor reserves the right to take an action if the student abuses the liberty provided for use of computer in the class for your convenience.

### **HCC Student Services Information**

Early alert: HCC has instituted an Early Alert process by which your professor will “alert” you through written contact actions and through counselors of **concerns that you might fail a class because of excessive absences and/or poor academic performance.** It is your responsibility to visit with your professor or a counselor to learn about what, if any, HCC interventions might be available to assist you – online tutoring, child care, financial aid, job placement, etc. – to stay in class and improve your academic performance.

### **Instructor Requirements**

As your instructor, it is my responsibility to:

- Provide the grading scale and detailed grading formula explain how student grades are to be derived
- Facilitate an effective learning environment through class labs, lectures, power points, reviews, and other materials
- Description of any special projects or assignments
- Inform students of policies such as attendance, withdrawal, tardiness, and make up
- Provide the course outline and class calendar which will include a description of any special projects or assignments
- Arrange to meet with individual students before and after class as required

### **Student's Responsibilities**

- Read lecture material before class, define unknown terms and come prepared to ask questions
- Attend all classes, pay close attention to instructions given by the instructor, follow procedures and participate to the fullest extent
- Immediately after the lecture, review lecture material covered and answer learning objectives
- Students should not study the night before the exam. Rather, plan to study a certain amount each day to achieve academic success

### **Lab reports:**

Although students will work in groups, individual active participation is expected. ***You are required to complete the lab reports, and turn them in the next class period.***

### Laboratory Policy

**Lab safety** will be reviewed on the first day of lab. Each student will then sign a statement affirming his or her commitment to following safe procedures in the laboratory, and turn the form in to the instructor. Be especially aware of the need for adequate *eye protection* in the laboratory. **Glasses or goggles must be worn at all times during the lab period.** Experiments may be performed in groups of up to three or four students each. Before you leave the lab, be sure to show me your report so I can review and **initialize** it.

Each student should arrive at the lab *on time*, with his or her lab manual. Each report must be done *individually*, but you can work with your lab partners on it. Each report will be graded on a 5-10 point basis. Come to the lab *prepared*. Read through the experiment beforehand, and review the pre-lab questions in the lab manual. You will be much better organized when doing the experiments, and your laboratory experience will be much more rewarding!

### Exams and Make-up Policy

Examinations will consist of four regular exams, two lab exams plus a comprehensive final. Make-up exams will not be given, so make every effort to take the exams on their scheduled dates. In the event that you *must* miss a regular exam, I will count the grade made on the final exam as the grade for the missed exam (for one missed exam only), and calculate the final course grade accordingly. **Lab exams (part I and II) are mandatory.**

**Review sheet for exams: Though review sheets for the exams are not guaranteed but the instructor will highlight the important parts of the covered course during his lecture delivery.**

**Coleman may conduct an additional (dept) test besides the exams described in this syllabus. This test may account for 20-25% score of the final exam.**

### Instructional Strategies

Instructional strategies will include classroom lectures, guest speakers and demonstrations, hands-on practice sessions, case studies, computer-generated instructional programs, and Internet access. The required textbook for this course are sold at the Central Campus Bookstore and may also be available at Majors Medical Book Store. Supplemental handouts may be expected by the instructor. Numerous reference books are available in the Library. In addition, the Library and the Computer Center (both located on the first floor of the Coleman Building) are equipped with fully operational computers available for student access.

### Study Strategies for Students

Each unit of instruction will be accompanied by a set of learning objectives. Students, who demonstrate a thorough knowledge of the learning objectives, should score well on written exams. It is highly recommended that students attend all lab sessions, pay close attention to instructions given by the instructor, follow procedures, and participate to the fullest extent. Students should not wait until the night before an exam to study. ***Studies have shown that students who study a certain amount each day are more likely to be successful.*** It is recommended that students read lecture material before a lecture is given, define unknown terms and prepare questions to ask the instructor during the lecture. Immediately after a lecture, the student should reread the lecture material and answer learning objectives as if they were study questions. Often, study questions will be given. These study questions are an excellent source of study material. Tutoring is available to all students for lectures and labs in a course. It is the student's responsibility to fill out a request form and/or contact the instructor to schedule tutoring. It is imperative that students request tutoring as soon as the need develops. Do not wait until the last minute to begin needed work. Tutoring for lecture or lab will be scheduled outside of regular class meetings.

E-mail is encouraged and is a good aid for asking questions both of the instructor and other students in the class. Do not hesitate to use it. If you discover a good Web Site, please pass on this information and it will be added to the list of useful sites. Various other methods to improve study are professional journals located in the library. Consult with the librarian

**Grading System:**

Four lecture tests	400
Final lecture exam (*)	100
Laboratory exam: Part 1 (30) and Part 2- (20)	50
Laboratory book/manual	50
Home assignments (lecture/lab) and attendance	(80+20)

To obtain a good grade for the lab manual:

- 1) Students should complete their laboratory notebook on a timely basis and it will be your responsibility to obtain the Instructor's signature every week.
- 2) Use appropriate colors to represent the staining procedures performed wherever necessary. The handwriting should be legible and clear.
- 3) The Instructor will explain how the various home assignments and attendance for lectures and lab are weighted.
- 4) Perfect attendance (and arriving on-time) is highly encouraged and will assist students in getting points reserved for attendance. Four points are deducted for each absence. Two tardy's (leaving early or arriving late to lab/lecture) will also result in deduction of four points.
- 5)\* The grade from the final exam will be used to replace the lowest grade of the remaining tests. The score from the departmental exam (20-25%) will be included in the final test. This gives an opportunity to improve the grade.

The Instructor understands the various needs of the students. Therefore every possible attempt to cooperate with you for valid and genuine problems at his discretion will be made.

All examinations are weighted equally, so adding the test scores and dividing by seven determines the semester average.

**A = 90-100 B = 80-89 C = 70-79 D = 60-69 F = 00-59**

**Makeup Examinations:**

Please be reminded: **Due to the nature and pace of this course, THERE WILL BE NO MAKEUP EXAMINATION FOR THE LAB (I&II) AND FINAL EXAM.**

If you have an acceptable excuse (approved in advance by the Instructor) for missing one **lecture** exam (only), your makeup test will be given at the time of the final exam. *Being late to an exam will result in a ten point penalty.*

**EGLS3-Evaluation for Greater Learning Student Survey System:**

At HCCS, professors believe that thoughtful student feedback is necessary to improve teaching and learning. During a designated time, you will be asked to answer a short online survey of research-based questions related to instruction. The anonymous results of the survey will be made available to your professors and division chairs for continual improvement of instruction. Look for the survey as part of the HCC student system online near the end of the term.

- 1: A Brief History of Microbiology
- 2: The Chemistry of Microbiology
- 3: Cell Structure and Function
- 4: Microscopy, Staining, and Classification
- 6: Microbial Nutrition and Growth
- 9: Controlling Microbial Growth in the Environment
- 10: Controlling Microbial Growth in the Body: Antimicrobial Drugs
- 11: Characterizing and Classifying Prokaryotes
- 13: Viruses: classification and characterization
- 14: Epidemics and epidemiology
- 19: Gram positive bacterial infections
- 20: Gram negative bacterial infections
- 15: Innate immunity
- 16: Adaptive immunity
- 17: Immunization and immune testing
- 18: Immune disorder

## SCHEDULE

<b>Date:</b>	<b>Lecture (Tue 6p: Room 368)</b>	<b>Lab (Thu 6p: Lab 279)</b>
08/26	Introduction & Chapter 1	
08/28		Lab1/Chapter 1
09/02	Chapter 2	
09/04		Lab2
09/09	Chapters 3	
09/11		Chapter 4
09/16	<b><u>Lecture Exam 1</u></b> & Ch. 6	
09/18		Labs 3 & 5
09/23	Chapters 6 and exam review	
09/25		Lab 4
09/30	Chapter 9	
10/02		Lab 10
10/07	Chapter 10	
10/09		Chapter 11
10/14	<b><u>Lecture Exam 2</u></b> & Ch. 13	
10/16		Lab 13
10/21	Chapter 14	
10/23		Lab 14 & 21
10/28	Chapter 19	
10/30		Chapter 20
11/04	<b><u>Lecture Exam 3</u></b> & Ch 15	
11/06		Lab 20 & Ch.15
11/11	Chapter 16	
11/13		Ch.17
11/18	Chapter 18	
11/20		<b><u>Review Lab exam I</u></b>
11/25	<b><u>Lecture Exam 4</u></b>	
11/27		<b><u>THANKSGIVING HOLIDAY</u></b>
12/02	<b><u>Lab exam II (Descriptive)</u></b> Review for Final exam	
12/04		<b><u>Lab exam I</u></b> Submit lab books and HA
12/9	<b><u>Final Comprehensive Exam</u></b>	
12/11		<b><u>Departmental exam</u></b>

**\*Note: All dates are tentative and subject to change as per progress and decision of the Instructor.**