



# Course Syllabus

## MICROBIOLOGY

### BIOL 2420

<b><u>Semester</u></b>	<b>Spring 2013</b>
<b><u>(CRN)</u></b>	<b>30864</b>
<b><u>Instructor contact</u></b>	<b>AUGUSTE NIOUPIN</b> 8001 FULTON, Houston, TX 77022
<b><u>Phone Number:</u></b>	(713) 718-2443
<b><u>Email Address:</u></b>	<b>auguste.nioupin@hccs.edu</b>
<b><u>Office Location and Hours</u></b>	Northline Campus, Room 321 Fridays; 10:00 a.m. to 2:00 p.m.
<b><u>Course Location/Times</u></b>	Tuesdays: 2:00 p.m. to 5:00 p.m.; <b>Room 309</b> (Lecture/ Lab) Thursdays: 2:00 p.m. to 5:00 p.m.; <b>Room 217</b> (Lecture)
<b><u>Course Semester Credit Hours (SCH)</u></b>	Credit Hours 4.00 Lecture Hours 3.00 (3 college credits) Laboratory Hours 3.00 (1 college credit)
<b><u>Total Course Contact Hours</u></b>	96.00
<b><u>Course Length</u></b>	16 weeks
<b><u>Type of Instruction</u></b>	In person, on campus.
<b><u>Course Description:</u></b>	Study of microorganisms including morphology, metabolism, taxonomy, culture techniques, microbial genetics, immunology, bacteriology, virology, mycology, parasitology, and diseases. Core Curriculum course
<b><u>Course Prerequisite(s)</u></b>	<ul style="list-style-type: none"><li>• College-level reading (or take GUST 0342) and</li><li>• College-level writing (or take ENGL 0310/0349)</li><li>• <b>BIOL 1406: General Biology 1</b></li></ul>

## Instructional Materials

### TEXTBOOK:

- TITLE: *Foundations in Microbiology, 8<sup>th</sup> ed. 2012.*
- AUTHORS: *Talaro, K and Chess, B.*
- PUBLISHERS: *McGraw-Hill*
- Student companion site: [http://highered.mcgraw-hill.com/sites/0073375292/student\\_view0/](http://highered.mcgraw-hill.com/sites/0073375292/student_view0/)

### LAB MANUAL:

- TITLE: *Microbiology, Laboratory Manual for Biology 2420, 5<sup>th</sup> Ed. 2007*
- AUTHORS: *Donna S. Wiersema & Pramila Sen*

## Course Student Learning Outcomes (SLO):

1. Explain microbial evolution, microbial diversity on earth, and environmental impact of microbes.
2. Understand microbial cell biology and genetics including, cellular structure and function, cell division and growth, metabolism, mutations, and inheritance.
3. Recognize Microbe-Human Interactions including, host non-specific defenses, adaptive immunity, chemotherapy (antibiotics), pathogenesis, and disease transmission.
4. Apply basics of biotechnology and genetic engineering, to provide an understanding of the importance of molecular methods in the construction of microbial products for scientific, medical, and industrial uses.
5. Apply microbiology laboratory safety rules and maintain lab equipment and lab environment in accordance with those rules.
6. Perform standard microbiological lab techniques including, use of the bright field microscope, aseptic technique, smear preparation and staining, inoculation/streaking techniques, media preparation, serial dilutions, and incubation protocols.

## Learning Objectives

**Explain microbial evolution, microbial diversity on earth, and environmental impact of microbes.**

**Understand microbial cell biology and genetics including, cellular structure and function, cell division and growth, metabolism, mutations, and inheritance.**

**Recognize Microbe-Human Interactions including, host non-specific defenses, adaptive immunity, chemotherapy (antibiotics), pathogenesis, and disease transmission.**

**Apply basics of biotechnology and genetic engineering, to provide an understanding of the importance of molecular methods in the construction of microbial products for scientific, medical, and industrial uses.**

**Apply microbiology laboratory safety rules and maintain lab equipment and lab environment in accordance with those rules.**

**Perform standard microbiological lab techniques including, use of the bright field microscope, aseptic technique, smear preparation and staining, inoculation/streaking techniques, media preparation, serial dilutions, and incubation protocols.**

## Instructional Methods

This course focuses on your textbook readings and instructor Power Point lectures. Course contents are heavily based on the topics covered in the required textbook, although certain details may be added from various easily accessible sources. It is the responsibility of the student to read the chapters assigned by the instructor with emphasis on the topics and concepts covered in class. Any of these topics can be included in lecture exams, although the main focus of these tests will be derived from the reviews.

Laboratory sessions will include exercises from the required laboratory manual. In most cases, "lab day" will be de facto lecture/lab exercise. Lab reports are due at the next **lecture** session immediately following "lab day". Lab reports must be turned in to your instructor no later than the **end** of that lecture session. Lab reports turned within 24 hours after the deadline will be assessed a 20% penalty. Anything turned in more than 24 hours after the deadline will earn you a **0 (zero!)**.

**Student  
Assignments**

Students are required to read assigned chapters.  
Announced or unannounced quizzes during lecture or lab may be conducted throughout the semester.

**Student  
Assessment(s)**

**EXAMINATIONS AND GRADES:**

Students will be assessed via lecture and laboratory examinations, final lecture and lab examinations.  
There will be a total of five examinations in all. These include 3 lecture exams, 1 laboratory exam and a final examination.  
You must provide ASAP a USB Flash drive with at least 1 gigabyte (1 GB) of available memory to your instructor to have a copy of lecture outlines, the reviews, the animations, and other useful documents.  
The laboratory exam will be based on the visual identification of selected microbes. The final will include material from review 4, and a comprehensive element.

**Instructor Grading  
Criteria**

**THE FINAL AVERAGE FOR THE COURSE IS CALCULATED AS FOLLOWS:**

3 LECTURE EXAMS: 36% (12% each)  
1 LABORATORY EXAM: 20%  
ATTENDANCE: 5%  
LAB REPORTS AVERAGE: 5%  
FINAL EXAM: 34%

**HCC Grading Scale**

A = 100- 90	4 points per semester hour
B = 89 - 80:	3 points per semester hour
C = 79 - 70:	2 points per semester hour
D = 69 - 60:	1 point per semester hour
59 and below = F	0 points per semester hour
IP (In Progress)	0 points per semester hour
W(Withdrawn)	0 points per semester hour
I (Incomplete)	0 points per semester hour
AUD (Audit)	0 points per semester hour

IP (In Progress) is given only in certain developmental courses. The student must re-enroll to receive credit. COM (Completed) is given in non-credit and continuing education courses. To compute grade point average (GPA), divide the total grade points by the total number of semester hours attempted. The grades "IP," "COM" and "I" do not affect GPA.

For Health Science programs, see the Program/Discipline Requirements section for specific grading requirements.

## Instructor's Requirements

### **BASIC REQUIREMENTS**

Students should be on time for class and be prepared with required materials including textbook and lab manual. Full class attendance is required including lecture and lab portions. Full attention during lecture and lab is required.

**YOU MUST PURCHASE A LAB COAT or AT LEAST A LONG SLEEVES SCRUB JACKET FOR LABORATORY EXERCISES.**

**NOTE:** This course requires basic level of computer skills such as **HCC Webmail, MS OFFICE 2007** or above (including **MS Word, MS PowerPoint, MS Excel**), **Windows XP** or above (including **Paint, Calculator, Notepad, WordPad, XPS viewer**, etc.), Current version of various **Web Browsers** (**Explorer, Firefox, Safari, Chrome, or Opera**)

### **ATTENDANCE POLICY**

The Houston Community College System permits up to 4 absences during a regular semester. Beyond that, the student may be subject to administrative withdrawal at the discretion of the Instructor.

In this course, attendance will constitute 5% of the final grade

0 absences = 100%

1 absence = 90%

2 absences = 80%

3 absences = 70%

4 absences = 60%

More than 4 absences = 0

**Note:** Classes start on time, at the designated, officially scheduled start time. You have 15 minutes to come in. Past 15 minutes after the officially scheduled start of class the doors shall be "locked" regardless of your circumstances. Your next opportunity to come in would be at break time which should occur 1 hour and 15 minutes after the officially scheduled start of class. Break time lasts 15 minutes, after which doors will be "locked" again. Missing half the class causes you to be half absent (whether you came in at break time, or you left before class was dismissed). Of course half absences **do** add up to full absences. Be aware of that.

### **PHONES AND ELECTRONIC DEVICES**

Absolutely no phone or other personal electronic devices are to be used during class (lecture and lab). This includes making or taking a call, reviewing messages, texting, playing games, checking email, surfing the web, or anything that involves a phone or other personal electronic device. If your work or family situation requires that you be available via phone, your phone can be on vibrate mode and you can take the call during our regular scheduled breaks or you can exit the class to review the call. Notify your friends, family, employers, and anyone else who regularly contacts you that you will be in class and that you should be contacted only when necessary. Answering phone calls during class is not only disruptive but it is also discourteous to classmates and the instructor.

Use of recording devices, including camera phones and tape recorders, is prohibited in classrooms, laboratories, faculty offices, and other locations where instruction, tutoring, or testing occurs. Students with disabilities who need to use a recording device as a reasonable accommodation should contact the Office for Students with Disabilities for information regarding reasonable accommodations.

**HCC ADA Policy Statement:**

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 of their respective college at the beginning of each semester. Faculty is authorized to provide only the accommodations requested by the Disability Support Services Office. For questions, contact Donna Price at 713-718-5165 or the Disability Counselor at your college.

Northeast ADA Counselor – **Kim Ingram – 713-718-8420**

ADA website: <http://www.hccs.edu/hccs/future-students/disability-services>

**Student Services Policies:**

<http://hccs.edu/student-rights>

**EGLS3 – Evaluation for Greater Learning Student Survey System**

At Houston Community College, professors believe that thoughtful student feedback is necessary to improve teaching and learning. During a designated time near the end of the term, 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 department chairs for continual improvement of instruction. Look for the survey as part of the Houston Community College Student System online near the end of the term. EGLS3 availability will be published later during the semester.

**ACADEMIC HONESTY**

Students are responsible for conducting themselves with honor and integrity in fulfilling course requirements. Disciplinary proceedings may be initiated by the College System against a student accused of scholastic dishonesty. Penalties can include a grade of "0" or "F" on the particular assignment, failure in the course, academic probation, or even dismissal from the College. Scholastic dishonesty includes, but is not limited to, cheating on a test, plagiarism and collusion.

**COURSE REPEATERS:**

"Students who repeat any college-level course for a third time or more at Houston Community College (HCC) will be assessed an extra fee of \$50 per credit hour. Please ask your instructor / counselor about opportunities for tutoring or other assistance prior to considering course withdrawal or if you are not receiving passing grades."

Faculty will **no** longer be able to "withdraw" students on their final semester roll sheets. The use of the **withdrawal form** must be used by students/faculty to withdraw students from coursework with appropriate boxes) checked. **If a student decides to withdraw from a class upon careful review of other options, the student can withdraw online prior to the deadline through their HCC Student Center, on PeopleSoft. Students should check HCC's Academic Calendar by Term for withdrawal dates and deadlines.**

The State of Texas has begun to impose penalties on students who drop courses excessively. For example, if you repeat the same course more than twice, you have to pay extra tuition. In 2007, the Texas Legislature passed a law limiting students to no more than **six** total course withdrawals throughout their academic career in obtaining a baccalaureate degree. There may be future penalties imposed.

To help students avoid having to drop/withdraw from any class, HCC has instituted an Early Alert process by which your instructor will “alert” you and HCC Student Services of the chance you might fail a class because of excessive absences and/or poor academic performance. You should visit with your Instructor, an HCC counselor, or HCC Online Student Services to learn about what, if any, HCC interventions might be offered to assist you – tutoring, child care, financial aid, job placement, etc. – to stay in class and improve your academic performance.

**MAKE UP POLICY**

A student **may** be allowed to make up an exam at the sole discretion of the instructor. Each situation will be evaluated on a case by case basis.

**CALENDAR:**

**IMPORTANT DATES FOR SPRING 2013**

Classes begin:	January 14 <sup>th</sup> .
<b>1<sup>st</sup> lecture exam:</b>	<b>February, 28<sup>th</sup></b> (Review 1 on Feb 21 <sup>st</sup> , Questions are due Feb. 20 <sup>th</sup> , before 7:30p)
President’s Day:	February 18 <sup>th</sup> .
Spring Break:	March 11 <sup>th</sup> through 17 <sup>th</sup> .
<b>2<sup>nd</sup> lecture exam:</b>	<b>March 28<sup>th</sup></b> (Review 2 on Mar. 21 <sup>st</sup> , Questions are due Mar. 20 <sup>th</sup> , before 7:30p)
Spring Holiday:	March 29 <sup>th</sup> through 31 <sup>st</sup> .
<b>Last Day to Drop (W):</b>	<b>April 1<sup>st</sup>. (4:30p)</b>
<b>3<sup>rd</sup> lecture exam:</b>	<b>April 25<sup>th</sup></b> (Review 3 on Apr. 18 <sup>th</sup> , Questions are due Apr. 17 <sup>th</sup> , before 7:30p)
<b>Laboratory Exam:</b>	<b>May 2<sup>nd</sup></b>
<b>Final Examinations Week:</b>	<b>May 9<sup>th</sup> (See Official Schedule)</b> (Review 4 on April 30 <sup>th</sup> Questions are due April 29 <sup>th</sup> , before 7:30p)
Grades available:	May 17 <sup>th</sup> .

See the Instructor for exact time and date. Time and Dates may be changed on short notice.

**CHAPTERS  
TO BE COVERED**

Chapter 1, The Main Themes of Microbiology  
Chapter 2, The Chemistry of Biology  
Chapter 3, Tools of the Laboratory: The Methods for Studying Microorganisms  
Chapter 4, Prokaryotic Profiles: The Bacteria and Archea  
Chapter 5, Eukaryotic Cells and Microorganisms  
Chapter 6, An Introduction to the Viruses  
Chapter 7, Elements of Microbial Nutrition, Ecology, and Growth  
Chapter 8, Microbial Metabolism: The Chemical Crossroads of Life  
Chapter 9, Microbial Genetics  
Chapter 10, Genetic Engineering: A Revolution in Molecular Biology  
Chapter 11, Physical and Chemical Control of Microbes  
Chapter 12, Drugs, Microbes, Host - The Elements of Chemotherapy  
Chapter 13, Microbe-Human Interactions: Infection and Disease  
Chapter 14, Nonspecific Host Defenses  
Chapter 15, Specific Immunity and Immunization  
Chapter 16, Disorders in Immunity  
Chapter 17, Diagnosing Infections  
+ Selected topics from Chapters 18 through 25.

- Lecture Exam #1 *should* cover chapters: 1, 2, 3, 4, 5
- Lecture Exam #2 *should* cover chapters: 6, 7, 8, 9
- Lecture Exam #3 *should* cover chapters: 10, 11, 12, 13
- **Final Exam should cover chapters: 14, 15, 16, and 17.**

**LABORATORY  
EXERCISES  
TO BE COVERED**

All lab exercises should be covered.

**LABORATORY  
SAFETY RULES:**

Read the rules in your lab book. Lab rules and regulations will be discussed during the first lab day and will be adhered to at all times. Each student is responsible for cleaning up after labs; this includes glassware, utensils, specimens/models and other material used during lab time. **You must bring a lab coat for lab sessions, and lab follow-up sessions.** If you are allergic to the available gloves (latex, nitrile, cotton, or glove powder) you may have to bring your own gloves.

**ONLINE TUTORING**

All BIOL students are encouraged to use HCC's online tutoring system for help with any BIOL class. Questions submitted to the ASK queue will be answered within 24 hours – and usually much before that. Tutors are on duty 7 days a week, 365 days a year. Online tutors will not do homework for you, but they will guide you in the right direction. To maximize the effectiveness of the system, be specific when you ask questions, and let the tutor know what class you are taking. Registering for online tutoring is easy. Go to [www.hccs.askonline.net](http://www.hccs.askonline.net). Select a user name and password that you will remember. Use any e-mail address, and add your student ID number in the COMMENT box. It will probably take five minutes to set up your askonline account. After that, you can submit questions in seconds. Tutor responses are not e-mailed to you. To see the answers, log back in to the system and click the bright yellow NEW button.

Online tutoring is also available for chemistry, physics, math, English, and papers in all disciplines.

**PLEASE NOTE!**

- You need to purchase your textbook and lab manual as soon as possible.
- If you have any problem whatsoever with the class, speak to the instructor first. Together we can handle it.
- You may contact me any time via the email.
- Check my office hours for personal conferences.
- Check on your grades often and discuss your concerns with me. Don't wait till the end of the semester!
- The class attendance roll rules: if you are not on the roll you cannot attend.
- Students are expected to conduct themselves as adults. Be courteous to your classmates and the instructor. Disruptive behavior or any behavior that interferes with any educational activity being performed by the instructor will not be allowed. No cursing is allowed in this class! You may have to walk... ☺  
Additionally, no student may interfere with his/her fellow students' right to pursue their academic goals to the fullest in an atmosphere appropriate to a community of scholars. Disruptive behavior may result in removal from the class.
- Turn in reports and assignments when they are due. Late work will be penalized.
- **SHOW UP! SHOW UP!! SHOW UP!!!**
- **STUDY! STUDY!! STUDY!!!**



10th Ed. © McGraw-Hill Education, 2017. © 945 p. © (Microbiology). © ISBN 10 1259705218, ISBN 13 978-1259705212. Foundations in Microbiology is an allied health microbiology text with a taxonomic approach to the disease chapters. It offers an engaging and accessible writing style through the use of case studies and analogies to thoroughly explain difficult microbiology concepts. We were so excited to offer a robust learning program with student-focused learning activities, allowing the students to manage their learning while you easily manage their assessment. Revised art and updated photos help concepts stand out.

Talaro/Chess: Foundations in Microbiology is an allied health microbiology text for non-science majors with a taxonomic approach to the disease chapters. It offers an engaging and accessible writing style through the use of tools such as case studies and analogies to thoroughly explain difficult microbiology concepts. We are so excited to offer a robust learning program with student-focused learning activities, allowing the student to manage their learning while you easily manage their assessment.

foundations in microbiology (biol3761) (lecture introduction to microbiology history of microbiology the golden ages 1850s: gram, pasteur, antibiotics now

Foundations in Microbiology (BIOL3761) (lecture 1) Introduction to Microbiology. History of Microbiology - i. The Golden Ages 1850s: Gram, Pasteur, Koch 1940-1950s: antibiotics Now: Microbiome, metagenomics, probiotics, asthma, MS, RA. Scientific Discovery i. Cell theory © Schwann, Virchow 1858 i. Disproving spontaneous generation © Pasteur 1865 i. Postulate rules © Koch 1890 i. Development of vaccines- Jenner 1796. Technical Progress i. Growth media © Koch's Lab 1880s i. Staining protocols © Gram 1884 i. Disinfection - Semmelweis 1847 Lister 1867 i. Sterilization procedures © 1879 Tyndall, Pasteur's Lab. Becker Professional Education, USMLE, Step 1, Biochemistry & Genetics Robert B. Dunn, "Becker USMLE Step 1 Physiology" Cari Sloma Mary Ruebush, "Becker USMLE Step 1 Immunology, Microbiology" Pathology, USMLE Step 1 - Volume 2: Systemic Pathology Becker Professional Education, USMLE, Step 1, Behavioral Science, Epidemiology, & Biostatistics. -Manhattan GMAT Strategy Guide 6 : Critical Reasoning -Manhattan GMAT Strategy Guide 2 : Algebra -Manhattan GMAT Strategy Guide 4 : Geometry -Solutions to GMAT Prep © Sentence Correction Questions with GMAT Foundation Course and E- Books ( Volume 3 : Intermediate Level ) -Wiley's Gmat Sentence Correction Grail 2018 by Aristotle Prep. Foundations in Microbiology. Uploaded by. Fajar Wasilah. Foundations in Microbiology Fifth Edition. Talaro Chapter 3 Copyright The McGraw-Hill Companies, Inc. Permission required for reproduction or display. Tools of the Laboratory © kcc2012. Angiotensinogen Expression is Enhanced in the Progression of Glomerular Disease. Uploaded by.