Wilberforce University **Division: Natural Sciences**

Course Syllabus

Course:	Bio341- General Microbiology
Term:	Spring 2012
Instructor:	Name: Dr. Savitha Krishna Email Address:skrishna@wilberforce.edu Phone Number: 937-708-5619
Catalog Description:	Fundamentals of microbiology focus on studying the morphology, classification and cultivations of microbes namely, yeast, fungi, bacteria and viruses. The study also helps the students to understand the microbes of diseases in human beings, host immunity and aseptic conditions. You will also be taught about the critical application of the microbes in human health and medicine, in industries like food and alternate energy source.
Prerequisites	BIO 120, CHEM 131, 132 (BIO Majors), BIO 120, CHEM 110 (HSA Majors).
Course Level Learning Outcomes:	1. The students will learn the principles of microbiology that are necessary for careers in various fields of biology like industries, labs and pharmaceuticals, nursing and nutrition. 2. Students will become more aware of the microbial life and their role as beneficial and harmful organisms in nature. 3. Students will demonstrate critical thinking and reasoning skills for identification, culture, staining and their application. 4. Students will be able to understand, demonstrate and apply aseptic techniques that are essential skills to protect themselves and surroundings from infectious agents. 5. Students should be able to demonstrate various staining techniques, identification and laboratory culture techniques using different media. In general, students finishing the course will understand and demonstrate knowledge of • General microbial world • Observing microorganisms through microscope • Functional anatomy of the pro-and Eukaryotic cells • Microbial growth and culture in different cultural media • Risk of microbes and growing them in aseptic condition • Microbes of clinical and medical importance • Pathogenesity of microbes and mode of their entry to human host • Microbes and host defense mechanism- emphasizing human immunobiology • Microbial diseases of digestive system- its consequences • Microbial diseases of urinogenital system- its consequences • Applied microbiology- an introduction to the applied aspects of

	microbes • Industrial applications of microbes: how are they currently being used in food and fermentation technology • Environmental microbes: how can microbes be used as alternative energy source
Materials:	The required text is "Microbiology: An Introduction by Tortora, Funke and Case". 2005. 10th Ed. Pearson Ed. Press. Lab Manual: Microbiology Laboratory theory and application (Brief edition) by Michael J. Leboffe and B. E. Pierce. Morton Publishers. **Both, Text book and lab manual are mandatory.**
Grading:	Grading Scale 90 - 100% = A 89 - 90% = B 79 - 80% = C 69 - 70% = D Below 60% = F Overall Grading: Tests: FOUR 1 hour lecture tests of 100 points each. There will be a one mandatory 100 points final exam that will be comprehensive. Test Formats: My exam is usually divided into section A which contains variety of questions such as multiple choices, true/false, matching, and filling in of the blanks. Section B is usually short essay type of question that gives the students the opportunity to express their understanding of the subject in the essay format. In addition to the exams dates listed on this syllabus, quizzes and assignments will be given whenever the instructor deems it necessary. These may be unannounced quizzes. One pre- and post-assessment exam will be conducted for 50 points. Final grade is overall performance of all the exams and lab/class work through out the semester. Grading Scales: 400 points Lecture Exam 100 points Laboratory work 100 points Assignments 100 finals Total points = 700

	A student's proficiency in course work is measured in terms of the following Alphabetical symbols. Minuses and pluses are not accepted. A: Excellent B: Good C: Satisfactory (Grade C or better required in major courses).

	D: Poor (passing, except in major courses). F: Earned Failure. (Removed only by repeating the course). Upon successfully passing the course, the first grade is "excluded" from grade point average. The second grade is "included in the recalculation of the grade point average. I: Incomplete (student performing satisfactorily, but unable to complete coursework due to valid reason). N: Used in cases where grades are not yet submitted. W: Withdrew before course drop deadline. WP: Student withdraws from University. Withdrew passing after course drop deadline (2 weeks after mid-term). WF: Student withdraws from University. Withdrew failing after course drop deadline (2 weeks after mid-term. WF is treated as an F (punitive grade). CR: Credit/pass NC: No credit/fail Z: Failed course for non-attendance/unofficial withdrawal (treated the same as an F grade). Last date of attendance is reported by faculty.

Activities:	To successfully complete the course student should read the **text book** constantly and prepare for the tests. Do all the labs, turn in all the lab reports, assignments on time, participate in class discussions and pass the tests with at least C letter grade.
Policy Statements:	

University Policies:	Academic Honesty: Plagiarism and cheating are completely unacceptable in an institution of higher education and learning. Such behavior deprives the student involved of the desired education and development of an appropriate value system. It is extremely unfair to other students, and it severely diminishes the value and integrity of a University degree. Plagiarism occurs whenever another's work is submitted as one's own. This includes the use of information from an Internet site or from a published author's ideas and words without proper attribution or documentation. It also includes the coping of term papers, other unpublished works, homework, case reports, computer programs and spreadsheets, and any other course assignments which are submitted for course credit as the student's own effort. Each instructor shall state the specific penalties for plagiarism and cheating in the course syllabus. The instructor has final responsibility for assessing the penalty in such cases regarding the course grade. All cases of plagiarism and cheating will be referred to the Vice President for Academic Affairs for possible further action. Additional penalties may be imposed for the egregious cases of plagiarism and cheating.

Drops and Withdrawals

Dropping Courses:

A course may be dropped up through the end of the second week of the semester without any record on the transcript. After this date, a course may be dropped up to two weeks after mid-term grade reports are due, with a W appearing on the transcript. Withdrawals after mid-terms must be approved by the Vice-president of academic Affairs.

In certain General Studies core courses, students' assignments to course sections may be changed by faculty with written notification given to the Registrar. In all other cases, a student wishing to move from one section of a course to another must accomplish this by using a drop-add form to drop the old section and add the new section.

Withdrawal/Grading Policies

The following procedures will apply to all students withdrawing from the University. Grades will be given in regard to the time of withdrawal. Contact the Registrar's Office for forms and assistance.

- **W** (official withdrawal initiated by the student): To be given when a student withdraws between the first day of class/registration and the last day to drop courses, this is two weeks after mid-term exams.

- **AW** (unofficial withdrawal not initiated by the student): The student does not inform anyone that he/she is leaving campus (the student walks out). The university may also administratively withdraw a student for disciplinary reasons, academic legal anytime during the semester.

Special Accommodations:

A student who is ill or who has or develops medical conditions including but not limited to illness, physical or other disability or pregnancy must notify the Director of Health Services immediately.

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<tr><td>Classroom Conduct:

Contact Hours:</td><td>Your questions are encouraged in good manner not to disrupt the lecture or disturb the concentration of your classmates

No disruptive behaviors like talking, reading the newspaper, laughing etc. will be tolerated when lecture is going on.
Please refrain from wandering in and out the classroom during lecture. I may deduct 10 points each time you wander around during lecture.

Class room behavior and attitude does matter a lot for conducting proper class room lectures. Therefore, you are encouraged to exhibit appropriate class room behavior and instructor may deduct 5 points each time you raise in-appropriate questions and concerns during the lecture hours.

Cellular telephones in the classroom they can be quite intrusive. Please turn all cell phones off when you are in the classroom. If you are found using a cell phone during an examination, it will be assumed that you are reading the questions to someone, on the other end, they are supplying you with answers. Therefore, your paper will be confiscated and you will receive a grade of <u>“F”</u> for that exam.

Lecture: MWF: 3:00 – 3: 50 PM K308
Lab: T: 9:00 -11:50 AM K308</td></tr>
<tr><td>Course Policies :</td><td>• You will be allowed to take 4 unexcused absences from the lectures. A faculty member may lower a grade when more than 3 unexcused absences occur.
• <u>Lab policy</u>: If you are absent for any particular lab, your lab report for absent days are not accepted. You are considered absent for the lab and as you did not participated in the experiment, <u>you will NOT be eligible to submit such lab reports or earn points</u>. <u>I am serious on this matter. You are responsible for loss of any such points and lower grades.</u>
• No cell phone or any other electronic devices can be used inside the class room during lecture or labs. I would deduct points each time you are found using those devises.
• There will be test every month.
• Note that I will NOT give a make up exam, so I encourage you to plan on taking all the tests as scheduled. If you miss any exam, it will be very difficult to have a passing grade in this course. Unless justified by a medical report no re-exam or make-up exam will be given. Also, an “Incomplete” (I) will not be given in this course, except in a case where a student is passing all the tests but unable to complete finals due to extended illness.</td></tr>
<tr><td>Weekly Schedules:</td><td>Weeks   Topics
Week 1   chapter1   General Microbiology
Lab: Introduction</td></tr>
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	Week 2 chapter2 Microbes and Macromolecules Lab: Microscopy Week 3 chapter3 Microscopy and Staining Techniques Lab: Staining techniques Week 4 chapter4 Functional anatomy of Pro & Eukaryotes **Test 1** Lab:Staining (Gram/ Negative staining) Week 5 chapter6 Growth & Culturing of Bacteria Lab: transfer and isolation of bacteria Week 6 chapter15 Microbial mechanism of pathogenicity Lab: Interaction of microbe and epidemiology **Mid-term exam** Week 7 chapter 16 Concept of Host Defense System: Immunology Lab: Blood group determination Week 8 chapter20 Control of growth by disinfection, sterilization Lab: Bacteria of the skin Week 9 chapter26 Microbiology of digestive system/urinogenital system Lab: Bacteria of the mouth **Test 3** Week 10 chapter 27 Applied Microbiology Environmental Microbiology (Public Health) (Water safety: Coliform testing) Lab: Bacterial culture using local water around WU Week 11 chapter 27 Elemental Cycling (C, N, P, etc) Lab: Bacteria of soil Week 12 chapter 28 Industrial Microbiology **Test 4** Lab: Fermentation Week 13 chapter 28 Food Microbiology (Food Poisoning etc.) Lab: Microbes in food: contamination Week 14 chapter 28 Industrial products Lab: project work/assignment Week 15 chapter 28 Alternative Energy Source Lab: open Week 16 **COMPREHENSIVE FINAL Exam**

Advising & Tutorial Support:	**Contact ACCESS office**