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**Biology Department, College of Arts & Sciences, Valdosta State University**  
**SPRING 2013----COURSE SYLLABUS\***

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**BIOL 3100, Sections A & B. Microbiology (CRN 20694 & 20695) - 4 credit hours**

**BIOL 5100, Sections A & B. Microbiology (CRN 20725 & 20726) 4 credit hours**

<b>Class:</b>	<b>TR</b>		<b>8:00-9:15 am, 2022 Bailey Science Center</b>
<b>Laboratory:</b>	<b>TR</b>	<b>3100/5100 <u>Section A</u></b>	<b>10:00-11:25 am, 2068 Bailey Science Center</b>
	<b>TR</b>	<b>3100/5100 <u>Section B</u></b>	<b>2:00-3:25 pm, 2068 Bailey Science Center</b>

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<b><u>Instructor:</u></b>	<b>Dr. Jenifer Turco</b>	<b>Email:</b>	<b><a href="mailto:jturco@valdosta.edu">jturco@valdosta.edu</a></b>
<b><u>Telephone:</u></b>	<b>229-249-4845</b>	<b>Office:</b>	<b>2091 Bailey Science Center</b>
<b><u>Office Hours:</u></b>	<b>Tues. 4:30-5:30 pm &amp; Thurs. 12:30-1:30 pm; or by appointment.</b>		

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**Course Description: BIOL 3100 Microbiology 3-3-4 (4 credit hours)** Prerequisites: BIOL 1107K, BIOL 1108K, BIOL 3200, CHEM 1211/CHEM 1211L, CHEM 1212/1212L. Recommended: CHEM 3402. **BIOL 5100 Microbiology 3-3-4 (4 credit hours)** Prerequisite: Admission into the graduate program or permission of the instructor. Survey of microbiology covering eubacteria, archaebacteria, protozoa, fungi, algae, and viruses. Includes fundamental techniques, microbial physiology and genetics, biotechnology, medical applications, and applied microbiology. Two 1.5 hour laboratory periods per week.

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**Required Textbook:** **BROCK BIOLOGY OF MICROORGANISMS, Thirteenth Edition**  
by Michael T. Madigan, John M. Martinko, David A. Stahl, and David P. Clark.



The **VSU General Education Outcomes** (numbered 1-8) are available online at <http://www.valdosta.edu/pers/gened.shtml> ; in this syllabus they are referred to as VSU1-VSU8.

The **Biology Undergraduate Educational Outcomes** (numbered 1-5) are available in the VSU Undergraduate Catalog, and the **Biology Graduate Educational Outcomes** are available in the VSU Graduate Catalog and are numbered 1 through 4. Both catalogs are available online through <http://www.valdosta.edu>. In this syllabus the Biology Undergraduate and Graduate Educational Outcomes are designated as B1-B5 and GB1-GB4, respectively.

The course objectives that are aligned with the USG, VSU and Biology Department Educational Outcomes/Objectives are below.

<b>USG, VSU or Biology Objective</b>	<b>Course Objective(s)</b>
Core Area A1 Learning Goal	ZF, ZG, ZH
Core Area A2 Learning Goal	G, ZE, ZF
Core Area B Learning Goal	C, D, M, R, U, V, X, Y
Core Area D Learning Goal	all course objectives
Core US Goal	C, D, M, R, U, V, X, Y
Core GL Goal	C, D, M, R, U, V, X, Y
Core CT Goal	E, G, H, R, ZB, ZD, ZE, ZF, ZG, ZH
VSU1	C, D, M, R, U, V, X, Y
VSU2	C, D, M, R, U, V, X, Y
VSU3	ZF, ZG, ZH
VSU4	ZB, ZF, ZH
VSU5	all course objectives
VSU7	C, D, G, H, M, O, R, ZA, ZB, ZD, ZE, ZF, ZH
VSU8	18.35 Tm[()] TJET EMC rMr4

Date	Topics/Lab Exercises	Related material in text
Thurs. Jan. 10L	<p>.....continued from the preceding page</p> <p><b>&gt;PLEASE READ THE FOLLOWING BEFORE NEXT WEEK:</b></p> <p>LABORATORY SAFETY (Read handout &amp; p. xi-xvi in lab manual.)</p> <p>EX. 9, ASEPTIC TECHNIQUE</p> <p>SUPL. EX., WINOGRADSKY COLUMN; EX. 52 WINOGRADSKY COLUMN (IN LAB MANUAL), AND PAGES 643-646 IN THE TEXTBOOK.</p> <p><b><u>Wash your hands before leaving lab!</u></b></p>	
Tues. Jan. 15	Cell structure/function	<b>Chap. 3</b>
Tues. Jan. 15L	<p><b><u>Please note that missing this particular lab period will result in a deduction of 25 points, except in the event of a documented, serious emergency.</u></b></p>	
	<p>&gt;LAB ORIENTATION &amp; LABORATORY SAFETY</p>	
	<p>&gt;EX. 9, ASEPTIC TECHNIQUE <b><u>Wash your hands before leaving lab!</u></b></p>	
	<p>PLEASE REMEMBER TO READ THE INFORMATION FOR EACH DAY'S LAB <b><u>BEFORE</u></b> COMING TO LAB.</p>	
x	<p>Discuss the Winogradsky Column Project with your lab group. Decide on a question, formulate a hypothesis, and decide how you will conduct the experiment. Discuss your experiment design, plans for data collection, and plans for your lab report. Decide on your assignments for the Winogradsky Column Project, and bring any required materials to lab next Thursday, Jan. 24. Each group of 4 students will build <u>at least</u> two columns.</p>	
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Date	Topics/Lab Exercises	Related material in text
Thurs. Jan. 31L	<p style="text-align: center;"><b>age</b></p> <p>&gt;FINISH EX. 8, THE FUNGI (Fungi Study – Do NOT open fungal cultures in the lab. Open them only in the biological safety cabinet. You will use clear cellophane tape to prepare slides of two or more different molds. The instructor will demonstrate this procedure, which is described in the lab manual on p. 64. Examine the slides using the low power (10x) objective and the high dry (40x)</p>	

<b>Date</b>	<b>Topics/Lab Exercises</b>	<b>Related material in text</b>
Thurs. Feb. 14L	<i>Program #3, Metabolism</i>	<b>Chap. 35 (p. 1007-1010); Chap. 15 (p. 425-427),</b>

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**Date**

**Topics/Lab Exercises**

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**Date**

**Topics/La4(o)43S**

Date	Topics/Lab Exercises	Related material in text
Tues. Apr. 2L	<p>&gt;<del>HANDIN LAB REPORT ON GENERAL UNKNOWN</del> (W)TJETBT/F2 8.04 Tfl 0 T/F6(S)4(KY)7( )ues.            &gt;CONTINUE SUPPL. EX., <i>Staphylococcus aureus</i> (Record results on board. We will omit Kirby-Bauer antibiotic sensitivity tests that are described in this exercise. Remember to streak presumptive <i>S. aureus</i> for isolation on a plate of tryptic soy agar. This plate will be used for an agglutination test on Thursday.)            &gt;SUPPL. EX., BACTERIAL CONJUGATION            &gt; MONITOR WINOGRADSKY COLUMNS, <b><u>LAST TIME</u></b></p>	
Thurs. Apr. 4	Innate immunity; adaptive immunity	<b>Chap. 28-31</b>
Thurs. Apr. 4L	<p>&gt;FINISH SUPPL. EX., <i>S. aureus</i>            &gt;LATEX AGGLUTINATION TEST FOR <i>S. aureus</i> IDENTIFICATION – There is no writeup for this test. In the lab manual, Ex. 74 describes a similar agglutination test; however we will use reagents from a different manufacturer. The instructor will summarize the principle of the test and will give directions at the beginning of the lab.            RECORD RESULTS from <i>S. aureus</i> EX. &amp; latex test on board &amp; in chart.            FINISH SUPPL. EX., BACTERIAL CONJUGATION – Answer the questions with this exercise &amp; be sure you understand what happened and why it happened.  <b><u>WORK ON WINOGRADSKY COLUMN PROJECT LAB REPORT</u></b>  <b><u>STUDENT ORAL PRESENTATIONS</u></b></p>	
Tues. Apr. 9	Adaptive immunity	<b>Chap. 28-31</b>
Tues. Apr. 9L	<p><b><u>STUDENT ORAL PRESENTATIONS</u></b>            Practical applications of immunology            &gt;WORK ELISA AND IMMUNOFLUORESCENCE PROBLEMS (SEE COURSE PACKET)  <b><u>WORK ON WINOGRADSKY COLUMN PROJECT LAB REPORT</u></b></p>	<b>Chap. 28-31</b>
Thurs. Apr. 11	<b>EXAM 3 (will include both class and lab material)</b>	
Thurs. Apr. 11L	<p><b><u>STUDENT PRESENTATIONS</u></b>            Practical applications of immunology</p>	

## **ADDITIONAL INFORMATION**

**Course content:** We will not be covering all of the material in the textbook and lab manual. Please read the sections of the textbook and lab manual that pertain to the topics covered, and make use of the tables and illustrations. Study questions and online resources for the textbook may also be useful. **Specific assigned readings may be announced in class or lab, or they may be posted on BlazeView.**

### **Laboratory:**

1. Laboratory exercises are an integral part of microbiology. Students are expected to attend ALL laboratory sessions, to be on time at the beginning of the period, and to complete all assigned laboratory exercises. There will be no makeups for the laboratory exercises.
2. Microscopes will be assigned and spot checks will be made to ensure that they are clean and properly stored. Misuse or mishandling of the microscopes will result in the loss of points (20 points per occurrence). After you have finished using your microscope, please consult the "microscope checklist" to be certain that you have followed the proper procedures.
3. Each student must **read the laboratory exercises for the day, any additional required readings from the lab manual (noted in the syllabus), and any notes pertaining to the lab exercises (in the syllabus) before coming to the laboratory.** This will allow the student to complete the exercises in an efficient and informed manner.
4. Each student must record the results of the lab exercises and answer the related questions, as noted in the syllabus. In some cases, **lab reports** are due as indicated in the course schedule. If a student misses a portion of the lab work relating to a required lab report, the student's report will be worth a maximum of 85% of the points allotted for the report. Each student must turn in his/her own drawings and rRNA report. However, the Winogradsky Column Project report must be prepared with your lab group. **For this report, each group member will evaluate the percentage of the work contributed by each of the group members, and individual scores will reflect the average percents.** For the general unknown lab report, students may prepare their lab reports individually, or they may work with their lab groups and turn in joint reports. If a joint report is submitted, each student must include his/her own individual records and drawings that are labeled with his/her name.
5. One **lab exam** will be given. It will include material covered during the lab

classes of a course will be subject to receiving a failing grade in the course. The remainder of this paragraph outlines the laboratory/student oral presentation period attendance policy, except that there is a special policy for the lab period on Jan. 15 (see note in schedule). Attendance is required during ALL labs and student presentation periods. A student who has perfect lab attendance or who misses only one laboratory/student presentation period will receive 20 bonus points. A student who misses (or fails to complete) two to three laboratories/student presentation periods will receive 10 bonus points. Missing (or failing to complete) additional laboratories/student presentation periods will result in the **loss of points** as follows. Ten points will be deducted