WALTERS STATE COMMUNITY COLLEGE  
Course Syllabus

Course: BIOL 1111 – General Biology I  
Semester: 2012  
Instructor: Dr. Jeff T. Horner, Office NSCI 126, Phone: (423)585-6954 
E-Mail: Jeff.Horner@ws.edu  
Dr. Bill Sproat, Office Maples Marshall Hall 203 WSSC, Phone 865-774-5840, E-Mail: William.Sproat@ws.edu

Office Hours: Instructor’s office hours are posted on his office door  
FAX: 423-318-2762  
Secretary: 423-585-6865 (Sherry Woody)

Catalog Course Description:
Laboratory experiments and exercises designed to stress basic laboratory skills and procedures such as pipetting and mixing solutions, as well as introducing modern methods for analysis of cell components. Laboratory activities involve gel filtration chromatography, cell fractionation, DNA isolation, DNA fingerprinting using electrophoresis, immunological analysis of ovalbumin, plasmid uptake in bacteria and cloning techniques in bacteria. Intended for science majors
3 hours lab ..............................................................................................................1 hour credit

Student Learning Outcomes:
By the end of the course students should be able to:
1. Evaluate the data gathered from the “Scientific Experiment.”
2. Interpret the graph prepared from the data recovered from the experiment.
3. Reconstruct details concerning the cell, cellular organelles and their structure and function.
4. Reconstruct details concerning the gene, Mendelian laws, chromosomal theories and actions.
5. Ingrate DNA replication and recombinant technology into practical applications.
6. Apply the concepts of Gel Filtration Chromatography, Vertical and Horizontal electrophoresis, polymerase chain reaction (PCR) methodology using DNA thermal cycler and use of plasmid vectors in bacteria.
7. Reconstruct the concepts DNA and Protein Fingerprinting techniques, ELISA, and genetic engineering.

General Education Course Designation: Natural Science (1 hour)

Instructional and Evaluation Methods:
Three laboratory exams worth 100 points each will be given. The exams will focus on activities and results obtained from the laboratory exercises and assess the achievement of the learning outcomes prescribed for this course. Your attendance is essential to your success. You are required to attend each laboratory session in its entirety; each failure to do so without an acceptable excuse will result in 5 points being subtracted for the overall total points for each laboratory class missed. If you cannot attend your normal laboratory section you may avoid the penalty by arranging in advance to attend a different section that week.
All lab exams are to be taken **as scheduled** by the instructor and **all** must be taken in order to receive a **passing grade** for the course. If you miss an exam with acceptable justification (e.g. A signed physician’s note explaining why you could not attend.) you must contact your lab instructor within 48 hours to determine if other arrangements to take the exam can be made, otherwise a grade of zero will be given for that exam. Any exceptions must be approved by the Academic Dean and Vice President of Academic Affairs.

**“Results” Based Laboratory Experiments:**
1. Except for the first laboratory experiments, the other 10 labs will require that you be graded on the results you achieve.
2. There will be a total of 10 possible “results” points per lab.

**Grading Scale:**
100 Lab Results Points
300 Lab Exam Points

<table>
<thead>
<tr>
<th>Grade</th>
<th>Points</th>
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<tbody>
<tr>
<td>A</td>
<td>360 or more points</td>
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<tr>
<td>B</td>
<td>320-359 points</td>
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<td>C</td>
<td>280-319 points</td>
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<tr>
<td>D</td>
<td>240-279 points</td>
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<tr>
<td>F</td>
<td>239 or less points</td>
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**Course Content:**

<table>
<thead>
<tr>
<th>Week</th>
<th>Exercise</th>
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<tbody>
<tr>
<td>8/27</td>
<td>A. Measurements</td>
</tr>
<tr>
<td></td>
<td>B. Scientific Method</td>
</tr>
<tr>
<td>9/3</td>
<td>A. Pack Columns for Chromatography</td>
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<tr>
<td></td>
<td>B. Chromatographic Separation of Known Proteins</td>
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<tr>
<td>9/10</td>
<td>A. Chromatographic Separation of Unknown Proteins</td>
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<tr>
<td></td>
<td>B. Pour Agarose Gels</td>
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<tr>
<td>9/17</td>
<td>Genetics &amp; Sickle Cell Anemia Electrophoretic</td>
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<tr>
<td></td>
<td>Separation of Known Proteins</td>
</tr>
<tr>
<td>9/24</td>
<td><strong>Lab Test #1</strong></td>
</tr>
<tr>
<td>10/1</td>
<td>Protein Fingerprint</td>
</tr>
<tr>
<td>10/8</td>
<td>A. Enzyme Cytochemistry</td>
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<td></td>
<td>B. Catechol Oxidase</td>
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<td>10/15</td>
<td><strong>FALL BREAK</strong></td>
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</table>
10/22  A. Photosynthesis Using Spectrophotometer  
      B. Cellular respiration

Lab Test #2

10/29

11/5  A. Cell Transport: Osmosis & Diffusion  
      B. Producing a Strain of E. coli that Glows in the Dark

11/12  DNA Fingerprinting & Digestion of Cow & Sheep DNA with Restriction Enzymes

11/19  Genetics

11/26  A. Amplification of a Hemoglobin Gene by the Polymerase Chain Reaction (PCR)

Lab Test #3

Course Ground Rules:
Students should attend the first day of class or contact the instructor prior to the first class. Failure to do this may result in being dropped from the class.

Plagiarism, cheating, and other forms of academic dishonesty are prohibited.

Students with disabilities must register with Student Support Services (SSB), Room U130 (phone 423-585-6892) if they need any special facilities, services, or consideration.

Students in need of tutoring assistance are encouraged to contact the Office of Student Tutoring located in the Student Services Building (SSB), Room L107. The phone number is 423-585-6920.

Students receiving any type of financial aid or scholarship should contact the Financial Aid Office before making any changes to their schedule. Schedule changes without prior approval may result in loss of award for the current term and future terms.

Students who have not paid fees on time and/or are not correctly registered for this class and whose names do not appear on official class rolls generated by the Admissions and Records Office will not be allowed to remain in class or receive credit for this course.

Cellular phone use during classroom interaction is prohibited. Cellular phones must be turned to the non-audible mode until after class, at which time calls can be received or checked. (See the Walters State Catalog/Handbook)

For information related to the cancellation of classes due to inclement weather, please check the college’s Web site at www.ws.edu or call the college’s student information line, 1-800-225-4770, option 1; InfoConnect, (423) 581-1233, option 1045; the Sevier County Campus, (865)
774-5800, option 7; or the Greeneville/Greene County Center for Higher Education, (423) 798-7940, option 4. Also, please monitor local TV and radio stations for weather-related announcements. For additional information on this policy see the college catalog.

In the event of a pandemic or other college declared critical event that impacts the college’s ability to proceed with academic course activities as planned, the college reserves the right to alter this course plan. In the event of a pandemic or other event, please refer to the college’s home web page, www.ws.edu or call InfoConnect, (423) 581-1233 for further information.

Regular class attendance is a student’s obligation. (See the Walters State Catalog/Student Handbook) If for some reason a student misses class, it is his or her responsibility to see the instructor regarding missed assignments and/or activities and to be prepared for the next class. Excessive absences may substantially lower the semester grade. The college requires the instructor to keep accurate records and to report when students are not attending class.

Students are required to supply a #2 pencil for each lecture exam.

The wearing of hats and caps in class is not allowed! Students will be asked to remove their hats and caps.

STAY AWAKE IN CLASS. Your mere presence in class is not sufficient—you must be able to actively process the information presented! Sleeping in class is disruptive in two ways: the student who is snoozing is not interested and not participating in the classroom discussion; secondly, sleeping in class is considered to be disrespectful to the teacher and other students. The penalty for sleeping in class may range from the student being requested to leave the class with a following conference with the instructor, to notification of the Vice-President of Academic Affairs (in the cases of habitual sleepers). If you have a medical condition that prevents you from staying awake in class, please discuss this with the instructor.

Safety:
1. There will be NO food, drink or tobacco products in the laboratory.
2. NO opened-toe shoes can be worn during lab. You will not be allowed to stay in the laboratory if the lab exercise uses any sort of glassware or chemicals.
3. NO purses, bags or coats on top of the student tables.
4. NO visitors in the laboratory without prior approval of the instructor.

Your Right to Know:
Tennessee Law requires that you are provided notice that some of the laboratory exercises involve contact with chemicals which have been identified with potential health hazards. These chemicals include, but are not limited to: acetone, chloroform, formalin, acids and bases. While every effort has been made to make the materials as safe as possible these chemicals are toxic and you must be responsible for their safe handling. If you feel you may be at a higher risk then normal, if pregnant for example, we recommend you consult your physician.

WSCC Catalog Notification Statement:
All students attending Walters State Community College, regardless of the time and location of the class, must abide by the rules and regulations outlined in the current Walters State Catalog/Student Handbook and the current “Walters State Timetable of Classes.” A copy of the
Catalog/Handbook and the “Timetable of Classes” may be obtained from the Admissions Office on the Main campus or at any of our off-campus sites. You may also access the Catalog/Handbook on-line at the following web address: http://www.ws.edu/catalog.
Alternative Teaching Plan
In the event of a pandemic or other college declared critical event, the lead faculty member for this course will use eLearn to communicate with the students. If the lead faculty member is affected by this event, another member from the teaching team will assume instruction for the course. The course will continue utilizing an online format of instruction and testing.

ATTENTION: The Natural Science faculty members are concerned with proper academic advising of students in ALL Pre-Professional programs. It is our explicit desire to help you with any advising problems you may encounter.