**Instructor:** Dr. Crosby W. Jones, Jr.

**Office:** 003C Cavness Science Building

**Office Hours:** Mon 9-10, 1-2, 4-6; Tues 12:30-5

**Contacts:** crosby.jones@angelo.edu (email) 486-6642 (office phone)

**Text:** None

**Other Materials:** Lab exercise handouts will be provided at each lab meeting. Bring paper and writing materials to each lab. The lecture outline may be useful for some labs.

**Attendance policy:** Each lab meeting requires that answers to a problem set be submitted. Missing a lab will result in a "0" being recorded for that exercise. Dead Week in this class is set aside solely as a make up week. If you have missed no more than one lab during the semester or you want to replace one low grade you can participate in the lab exercise scheduled for Dead Week and the score you earn will replace the missing score (or low score). Missing more than one lab will result in a "0" recorded for each lab missed.

**Prerequisite:** Bio 3301 or concurrent enrollment in 3301

**Course content:** Each lab exercise will employ one or more of the following tools to facilitate learning:

- Computer modeling of genetics experiments;
- Use of genetics websites and/or data bases to facilitate solving of genetics problems;
- Viewing video clips to update recent advances in genetics;
- and practice using genetics tools such as pedigrees, Punnett squares, etc.

**Student Learning Objective:** The major objective of this lab is to enhance the performance of the student in the lecture component of this course by providing more examples, one on one instruction and providing additional tools of learning most notably on-line support.

**Student Learning Assessment/Outcome:** To assess the objective stated above, the overall 3301 exam average of those students not enrolled in the lab will be compared to the overall 3301 exam average of those students who did enroll in the lab. The desired outcome is to obtain a higher average in the latter student population.

**Class assignments:** For each scheduled lab period, the computer will be used to generate experiments and/or as a source of information. Using this information, the student will answer a series of questions posed on a weekly problem set. These will be submitted for grading.

**Lab Exercises:** The order of lab exercises we perform will be dependent upon the topics being covered concurrently in Bio 3301 (below are the available topics listed in no particular order)

<table>
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<tr>
<th>Probability &amp; Ratios</th>
<th>Exploring Genetics</th>
<th>Mitosis &amp; the Cell Cycle</th>
<th>Control of Gene Expression</th>
<th>Meiosis &amp; Crossing Over</th>
<th>DNA Fingerprinting</th>
<th>Pedigree Analysis</th>
<th>Use of COSMIC data base</th>
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<tbody>
<tr>
<td>Genetic Counseling &amp; Pedigree Analysis</td>
<td>Testing the Mendelian Hypothesis</td>
<td>Mapping by Recombination Frequency</td>
<td>The Effect of Mutation upon Protein</td>
<td>Population Genetics &amp; the Influence of Environment</td>
<td>Sickle Cell Anemia: genetic crosses, pedigrees &amp; prob...</td>
<td>Genes &amp; Their Role in Natural Selection</td>
<td>Microarray simulation</td>
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<tr>
<td>The Sex Linked Cross</td>
<td>Other Modes of Inheritance</td>
<td>Karyotypes</td>
<td>Multiple Alleles</td>
<td>The Dihybrid Cross</td>
<td>Use of ISCN Formulas</td>
<td>Use of OMIM data base</td>
<td>Use of GenBank</td>
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**Additional Information**

1. Questions must be answered in numerical order, in legible penmanship & w/o re-writing the original question
2. Include data sheets with your problem set answers
3. Be not only correct but also complete in your answers to open ended questions
4. Consult the instructor often for review/suggestions/hints/help
5. Be on time to class--you are not guaranteed extra time to finish a lab
6. Follow the handout instructions step by step--this will save you time
You may discuss problem sets with your classmates but each person is expected to provide his/her own answers and rationales (in fact, in some cases, the computer will randomly change the data thereby possibly affecting the most appropriate answer).

**Final Grade:** Your average score rounded off to the nearest whole percentage will determine your final % (e.g. a 92.3 = 92% and 92.5 = 93%). Use the key below to find your final grade:

- **90% & above = A**
- **80-89% = B**
- **70-79% = C**
- **60-69% = D**
- **less than 60% = F**

**University Academic Honor Code:** Angelo State University expects its students to maintain complete honesty and integrity in their academic pursuits. Students are responsible for understanding the Academic Honor Code that is contained in both print and web versions of the Student Handbook.

**Disability Statement:** Persons with disabilities which may warrant academic accommodations must contact the Student Life Office in order to request and to implement academic accommodations.

**Religious holy day:** A student who intends to observe a religious holy day during the semester should make that intention known in writing to the instructor during the first week of the semester and one week prior to the absence. If this submission is completed, a student who is absent from classes for the observance of a religious holy day shall be allowed to take make up missed exams or assignments scheduled for that day in accordance with syllabus policy.”