BIOL 501 Biometrics

Tentative Syllabus, Spring 2015
Professor: Dr. Susan Romano

Contact Information
E-mail: s-romano2@wiu.edu
Phone: Cell (309)333-1568; Macomb 309-298-3387; Quad Cities 309-762-9481

Office Hours
Monday, 1–3 pm, Moline, Rm 1209 Quad Cities Complex
Tuesday, 1–3 pm, Macomb, Waggoner Hall, Room 283
Thursday, 2–3 pm, Moline, Rm 1209 Quad Cities Complex

Course Time and Location 4–6:50 pm, Section T01, Shedd Aquarium, and Section Q90, Quad Cities Complex, Room 2204

Course Purpose/Objectives
- Students will be able to analyze biological data using statistical software
- Students will be able to understand what statistics should be correctly applied to biological data
- Students will be able to successfully write a research proposal that incorporates statistical analyses

Course Description (3 sh) Basic methods of experimental design and evaluation of biological data. Prerequisite: Graduate standing in biology. (Graduate Catalog)


Software MYSTAT free student download available at http://www.systat.com/MystatProducts.aspx

Academic Misconduct
- If you plagiarize or cheat on an assignment or exam, you will receive a grade of zero (0) for that assignment or exam and could receive an F in the course. You are to do your own work on course assignments. The rights and responsibilities of all students are detailed online at http://www.wiu.edu/policies/acintegrity.php#rnone.
- The Official University Policy Manual webpage covers University policies related to student academic integrity, the course syllabus, grade appeals, oral English proficiency, student absences, and students participating in university–sanctioned activities.
- Web address for student rights and responsibilities http://www.wiu.edu/provost/students.php
Students With Disabilities
“In accordance with University policy and the Americans with Disabilities Act (ADA), academic accommodations may be made for any student who notifies the instructor of the need for an accommodation. For the instructor to provide the proper accommodation(s) you must obtain documentation of the need for an accommodation through Disability Resource Center (DRC) http://www.wiu.edu/student_services/disability_resource_center/students/connectWithTheDRC.php and provide it to the instructor. It is imperative that you take the initiative to bring such needs to the instructor’s attention, as he/she is not legally permitted to inquire about such particular needs of students. Students who may require special assistance in emergency evacuations (i.e. fire, tornado, etc.) should contact the instructor as to the most appropriate procedures to follow in such an emergency. Contact Disability Resource Center (DRC) at 298-2512 for additional services.” WIU Policy

Course Requirements and Grading

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Points</th>
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<tbody>
<tr>
<td>2 Exams: 100 points each</td>
<td>200</td>
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<tr>
<td>10 Problem sets, 10 points each</td>
<td>100</td>
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<tr>
<td>Research Proposal – Concise proposal outlining an experiment of your choice providing details on data collection and statistical analysis</td>
<td>100</td>
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<td>Total:</td>
<td>400</td>
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Grading will be based on the following scale:
90–100%=A, 80–89.9%=B, 70–79.9%=C, 60–69.9%=D, less than 60%=F

All assignments are due the next class meeting, 1 hour before class submitted to WesternOnline
<table>
<thead>
<tr>
<th>Date</th>
<th>Chapter/Subject</th>
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<tbody>
<tr>
<td>January 22</td>
<td>Syllabus review and course description, MYSTAT</td>
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</table>
| January 29 | Chapter 1. Data: Types and Presentation  
Chapter 2. Populations and Samples                                             |
| February 5 | Assignment 1 Submission  
Dr. Mike Romano—Guest Speaker—Chapter 5. Probabilities                          |
| February 12| Assignment 2 Submission  
Chapter 3. Measures of Central Tendency  
Chapter 4. Measures of Variability and Dispersion                               |
| February 19| Assignment 3 Submission  
Chapter 7. One-Sample Hypotheses  
Chapter 8. Two-Sample Hypotheses                                                 |
|            | Research Proposal discussion/handout                                              |
| February 26| Assignment 4 Submission  
Chapter 9. Paired-Sample Hypotheses  
Chapter 10. Multi-Sample Hypotheses and ANOVA                                     |
| March 5    | Assignment 5 Submission  
Dr. Mike Romano—Guest Speaker—Chapter 23. Contingency Tables                    |
| March 12   | Midterm Exam                                                                    |
| March 19   | Spring Break                                                                    |
| March 26   | Assignment 6 Submission  
Chapter 11. Multiple Comparisons  
Chapter 12. Two-Factor ANOVA  
Chapter 13. Data Transformations                                                  |
| April 2    | Assignment 7 Submission  
Chapter 14. Multiway Factorial Analysis of Variance  
Chapter 15. Nested Analysis of Variance  
Chapter 16. Multivariate Analysis of Variance                                     |
| April 5    | Last day to drop this class                                                      |
| April 9    | Assignment 8 Submission  
Chapter 17. Simple Linear Regression  
Chapter 19. Simple Linear Correlation  
Chapter 21. Polynomial Regression                                                 |
| April 16   | Assignment 9 Submission  
Non-parametric analyses (ordination, factor analysis, ecological modeling)      |
| April 23   | No Class (Upper Mississippi River Conference, Bettendorf, Iowa)                  |
| April 30   | Assignment 10 Submission  
Research Proposal Presentations — Alphabetical order—first half                  |
| May 7      | Research Proposal Presentations — Alphabetical order—second half                 |
| May 14     | Final Exam — Held during normal class time                                       |