Psychology 201: Statistics
Fall 2005
Course Information and Syllabus

Instructor: Char Morrow (cmorrow@mtholyoke.edu)
           1 Woodbridge Street; x2069

Graduate Student TA: Maureen Babineau (mebabine@mtholyoke.edu)
                      138 Reese; x3252

Meeting Times/Locations
Lecture: 1:15 - 2:30 PM Tues & Thurs, 302 Reese
4th hour: 1:00 – 1:50 PM Friday, 301 Reese
Lab:     3-4:50 PM Thurs or 9-10:50 AM Friday, 317 Reese

Office Hours:
Char Morrow: 1:00 – 3:00 Mondays or by appointment
Maureen Babineau: 12:00 – 1:00 Tuesday & Thursdays

       SPSS Student Version
       (complimentary from the publisher if purchased at the Odyssey)
In addition, a scientific calculator is strongly suggested for homework and exams.

Course Website: http://www.mtholyoke.edu/courses/cmorrow/psych201

Publishers Website: http://wps.prenhall.com/hss_aron_statbhnss_3
Welcome to the world of statistics! This course is a gateway to research in psychology and other social sciences. Most of you have indicated interest in pursuing some aspect of the wide, wide world of psychology. One of the things that ties together the diverse set of activities in this field is the toolkit called statistics. As with any toolkit, it is useless unless you know how to use it, and the only way to learn to use it is through hands-on experiences. During this semester you will be guided through information, homework, and labs designed to help you become a knowledgeable, proficient, and appropriate user of this toolkit. In other words, we want you to "own" your tools.

Tools can be intimidating when you don't know how to use them. Statistical tools sound even scarier to many people because they are so closely related to mathematical ideas, which do not evoke a warm, fuzzy feeling for many students. This course is designed to take you into the world of statistics in a guided and progressive way so that you learn to use the simpler tools first and then build on that knowledge to learn to use more complicated tools. Like any learning process, practice is everything. If you put time into practicing your new skills (i.e., do your homework and lab work regularly and thoroughly) you are practically guaranteed to be competent by the end of the course.

A word about math --- I hope that many of you see math as an opportunity for creative problem solving, but I know that many students do not feel this way. In this course, math is a tool rather than an end in itself. The mathematics we will use is not difficult at all. If you can relax a bit and take things slowly and methodically, you will not have any problems with the course. If you are having trouble slowing down and taking things one step at a time, please come to see us immediately. We can help!

You might have heard the phrase, “The numbers speak for themselves." In fact you will find that numbers do not speak for themselves, and that you will be interpreters for numbers --- that is what statistics is all about. (OK, that's a bit of an oversimplification, but I hope you get the idea). Statistics can help you see what is right in front of you, but covered up by your preconceived notions about the world. They can help you get a measure of objectivity. You have probably often heard the idea that you can lie with statistics. This is true, and we'll see how that works --- but you can also tell the truth better with statistics if you use them honestly and carefully. They are not everything, but they are something important. I hope by the end of the course you will be thinking of statistics less as a requirement and more as an opportunity.

On the following pages I have outlined the course requirements, topics by date (which may be revised somewhat as we go along), and how grades are determined. I have tried to be clear about what I expect from you and what you can expect from me. Both Maureen and I are here to help you learn, but you need to be a VERY active participant in this process. Read, work on problems, get a learning partner, come to 4th hour, relax, and never say, "No one told me....” There are multiple opportunities to re-visit ideas in order to improve your understanding (not to mention your grade). I have structure the course to make it possible for everyone to get an excellent grade. Now it's up to you!
Course Details

The chart following this section will give you a detailed list of what you are expected to do and how each of these things will contribute toward your grade.

Attendance Policies:
You are expected to attend all lectures and labs as listed on the schedule at the end of this syllabus. 4th hour is technically optional (i.e., you are not given points for attending), but attendance will be taken and will play a role if your grade is on the border between two grades. 4th hour is your first and main way of getting help with coursework. Of course you are welcome to come to office hours or make appointments if you have further questions, but we expect you to try to get help in 4th hour first. If you show up regularly for office hours, but do not attend 4th hour, we reserve the right to suspend your office hour privileges at least temporarily. This is a large class --- we expect you to respect our time and work within the structure we have built. This will allow us to give the best quality assistance to everyone.

If you find that you need to miss several classes due to illness, personal problems, or other issues, please seek an official excuse from the Health Center or Dean's Office and contact us immediately. We will do our best to work with you.

Lateness Policies:
Please come to class, lab, and appointments on time. If you show up late, we will not explain things again just for your benefit, nor will we extend an appointment into someone else's scheduled time. If lateness is an issue for you, we will be glad to help you try to figure out how to deal with it. During the winter, it may take you longer to get to class, so plan for that. If you need to pick up coffee along the way, plan for that. We are not talking about emergencies that inevitably come up in life; we are talking about everyday responsibilities.

Late work is not acceptable. We are making a commitment to grade your work and get it back to you as quickly as possible so that you may use the graded assignments as a learning and study opportunity.

- Homework due dates are listed on the syllabus and are due in class on the date listed. Homework will be accepted 1 day late, but no more than 1/2 credit can be earned for late homework. Homework more than 1 day late WILL NOT be accepted.
- Labs are due at 5 PM at my office on the day listed. Late labs are accepted at the discretion of the instructor. Prior notification is strongly encouraged.
- If you feel you have an emergency that precludes your turning work in on time, YOU MUST TALK TO US AHEAD OF TIME to avoid penalty.
Format for submitted work:
Please understand that it is a monumental task to respond to individual student work that is done in a large variety of formats and readability. To make grading as smooth as possible, you need to respect the following guidelines for work that you submit. Please do not find yourself in the position of having done the work, but not in an acceptable format causing you not to receive credit for it. Doing your work in a neat and readable format will benefit your understanding as well.

Homework Guidelines

- All homework must be done on 8.5 x 11 paper --- no frayed or ragged edges (i.e., do not rip the pages out of a notebook and leave the jagged strips hanging on).
- Your name and the homework number (i.e., Homework #1, Homework #2, etc.) must appear at the top of the page.
- Lined paper is strongly suggested unless you can write very evenly without lines. All graphs must be done on graph paper --- you can cut and paste in a graph if you like, but please do not make us look through sheaves of paper for a graph you did on a separate page.
- Write large enough and dark enough so that we won’t have to squint to see your work --- medium pencil with a good eraser is best. Lots of scribble-outs in ink will be annoying.
- Number the problems clearly. Show your work in an organized and easy-to-follow manner with your answers clearly marked. Do not expect us guess where your final result is --- we won’t do that.
- You will have 10 problems in every homework set: 5 problems that will be graded and 5 that you will be doing for further practice, but will not be graded. Thus you should turn in the problems in two separate groups, but all stapled together.
- You may do your work on computer, but you must show your work in any case.

Lab Report Guidelines

Everything stated above about readability, organization, and labeling applies to Lab Reports as well, though much more of your work will be done on computer. A specific format for each Lab Report will be given to you in lab. Follow it!

Rewrite Policies:
You will have a chance to redo/correct your homework problems ONLY IF you turn your homework in on time. Your homework will be brought to 4th hour on Friday and given back to you to work on further, getting help as needed. This means that if you only partially complete a problem, you should turn it in on time and finish it in 4th hour.

Students who receive less than 30 points on a lab report may turn in a revised report. Up to 10 points per report can be earned with revisions.

Retake policies for exams will be discussed at a later date.
**Reading:**
You are expected to read your textbook in advance of the topic being discussed in lecture. Not everything in the chapter will be discussed, but you will be able to ask better questions and fit the lecture into a broader context if you read ahead of time. I chose the text for its readability and liveliness. The readings should be manageable. Readings listed on the schedule are due for that day’s class.

**Evaluation:**
Your grade will be based on the following point system:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Points Per Unit</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class Attendance: Lecture (27)</td>
<td>3/class</td>
<td>81</td>
</tr>
<tr>
<td>Class Attendance: Lab (8)</td>
<td>5/lab</td>
<td>40</td>
</tr>
<tr>
<td>Lab Reports (4)</td>
<td>40/lab</td>
<td>160</td>
</tr>
<tr>
<td>Exams (3)</td>
<td>75/exam</td>
<td>225</td>
</tr>
<tr>
<td>Homework (9)</td>
<td>30/assignment</td>
<td>270</td>
</tr>
<tr>
<td>Research Participation (1)</td>
<td>30/study</td>
<td>30</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>806</strong></td>
</tr>
<tr>
<td>Extra Credit Mini-Projects (4)</td>
<td>10/project</td>
<td>40</td>
</tr>
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</table>

Grades will be assigned as follows:

<table>
<thead>
<tr>
<th>Grade</th>
<th>730 to 806</th>
<th>710 to 729</th>
<th>690 to 709</th>
<th>635 to 689</th>
<th>620 to 634</th>
<th>605 to 619</th>
<th>535 to 604</th>
<th>520 to 534</th>
<th>500 to 519</th>
<th>450 to 499.</th>
<th>Below 450</th>
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</thead>
<tbody>
<tr>
<td>A</td>
<td></td>
<td>A-</td>
<td>B+</td>
<td>B</td>
<td>B-</td>
<td>C+</td>
<td>C</td>
<td>C-</td>
<td>D+</td>
<td>D</td>
<td>F</td>
</tr>
</tbody>
</table>

**DATE** | **LECTURE TOPIC/READING** | **LAB/HOMEWORK** |
--- | ------------------------- | ------------------|
9/8 (Th) | Introduction             | No Lab            |
9/9 (Fri) | No 4th Hour             | No Lab            |
9/13 (Tues) | Descriptive Statistics: Freq/Averages Reading: Ch 1 all; Ch 2 pp 29-35 | |
9/15 (Th) | Standard Deviation & Z Scores Reading: Ch 2 pp 36-56 | Homework #1 Due LAB 1 (Section 1) |
9/16 (Fri) | 4th Hour               | LAB 1 (Section 2)  |
9/20 (Tues) | Correlation            |                    |
9/22 (Th) | Description vs Inference Normal Curves/Probability/Samples Reading: Ch 4 all | Homework #2 Due LAB 1 Continued (Section 1) |
9/23 (Fri) | 4th Hour               | LAB 1 Continued (Section 2) |
<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Reading/Assignments</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>9/27 (Tues)</td>
<td>Introduction to Hypothesis Testing</td>
<td>Reading: Ch 5 all</td>
<td>LAB 1 Due</td>
</tr>
<tr>
<td>9/29 (Th)</td>
<td>Hypothesis Testing</td>
<td>Reading: Ch 6 pp 154-163</td>
<td>Homework #3 Due</td>
</tr>
<tr>
<td>9/30 (Fri)</td>
<td></td>
<td>4th Hour</td>
<td>LAB 2</td>
</tr>
<tr>
<td>10/4 (Tues)</td>
<td>Questions &amp; Problem Demonstrations</td>
<td></td>
<td>LAB 2</td>
</tr>
<tr>
<td>10/6 (Th)</td>
<td><strong>EXAM 1</strong> (on material thru HW#3)</td>
<td></td>
<td>No Lab</td>
</tr>
<tr>
<td>10/7 (Fri)</td>
<td>No 4th Hour</td>
<td></td>
<td>No Lab</td>
</tr>
<tr>
<td>10/11 (Tues)</td>
<td><strong>FALL BREAK --- NO CLASS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10/13 (Th)</td>
<td>Hypothesis Testing</td>
<td>Reading: Ch 6 pp 164-177</td>
<td>Homework #4 Due</td>
</tr>
<tr>
<td>10/14 (Fri)</td>
<td></td>
<td>4th Hour</td>
<td>LAB 2 Continued</td>
</tr>
<tr>
<td>10/18 (Tues)</td>
<td>Statistical Significance</td>
<td>Reading: Ch 7, pp. 185-199</td>
<td>LAB 2 Due</td>
</tr>
<tr>
<td>10/20 (Th)</td>
<td>Statistical Significance</td>
<td>Reading: Ch 7, pp. 199-213</td>
<td>No Lab</td>
</tr>
<tr>
<td>10/21 (Fri)</td>
<td></td>
<td>4th Hour</td>
<td>No Lab</td>
</tr>
<tr>
<td>10/25 (Tues)</td>
<td>t Tests</td>
<td>Reading: Ch 8, pp. 218-237</td>
<td>Homework #5 Due</td>
</tr>
<tr>
<td>10/27 (Th)</td>
<td>t Tests</td>
<td>Reading: Ch 8, pp. 238-248</td>
<td>LAB 3</td>
</tr>
<tr>
<td>10/28 (Fri)</td>
<td></td>
<td>4th Hour</td>
<td>LAB 3</td>
</tr>
<tr>
<td>11/1 (Tues)</td>
<td>t Tests</td>
<td>Reading: Ch 9 all</td>
<td></td>
</tr>
<tr>
<td>11/3 (Th)</td>
<td>One Way ANOVA</td>
<td>Reading: Ch 10, pp. 289-300</td>
<td>Homework #6 Due</td>
</tr>
<tr>
<td>11/4 (Fri)</td>
<td></td>
<td>4th Hour</td>
<td>LAB 3 Continued</td>
</tr>
<tr>
<td>11/8 (Tues)</td>
<td>Questions &amp; Problem Demonstrations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11/10 (Th)</td>
<td><strong>EXAM 2</strong> (on material from HW#4 thru HW#6)</td>
<td></td>
<td>No Lab</td>
</tr>
<tr>
<td>11/11 (Fri)</td>
<td>No 4th Hour</td>
<td></td>
<td>No Lab</td>
</tr>
<tr>
<td>11/15 (Tues)</td>
<td>One Way ANOVA</td>
<td></td>
<td>LAB 3 Due</td>
</tr>
<tr>
<td>11/17 (Th)</td>
<td>Two Way ANOVA</td>
<td>Reading: Ch 10, pp. 301-322</td>
<td>Homework #7 Due</td>
</tr>
<tr>
<td>11/18 (Fri)</td>
<td></td>
<td>4th Hour</td>
<td>LAB 4</td>
</tr>
<tr>
<td>11/22 (Tues)</td>
<td>Two Way ANOVA</td>
<td></td>
<td>LAB 4</td>
</tr>
<tr>
<td>11/24 (Th)</td>
<td><strong>THANKSGIVING BREAK --- NO CLASS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11/29 (Tues)</td>
<td>Interpretation of Interaction Effects</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12/1 (Th)</td>
<td>Chi-Square &amp; Non-Normal Distributions</td>
<td>Reading: Ch 11 all</td>
<td>Homework #8 Due</td>
</tr>
<tr>
<td>12/2 (Fri)</td>
<td></td>
<td>4th Hour</td>
<td>LAB 4 Continued</td>
</tr>
</tbody>
</table>
### HOMEWORK CHART

(All homework problems are from Set II at the end of each chapter.)

<table>
<thead>
<tr>
<th>Homework #1</th>
<th>Problems to Be Graded</th>
<th>Ungraded Problems</th>
<th>Due</th>
</tr>
</thead>
</table>
| Ch 1 pp 26ff: #18, 19, 22  
Ch 2 pp 55ff: #11, 17 | Ch 1 pp 26ff: #14, 20, 23, 24  
Ch 2 pp 55ff: #13 (a & b) | 9/15 |
| Homework #2 | Ch 2 pp 55ff: #12, 13 (c, d, & e)  
19, 21, 24 | Ch 2 pp 55ff: #15, 16, 18, 20, 22 | 9/22 |
| Homework #3 | Ch 3 pp 99ff: #13, 15, 23  
Ch 4 pp 130ff: #18, 19 | Ch 3 pp 99ff: #12, 14, 22  
Ch 4 pp 130ff: #16, 23 | 9/29 |

**REMINDER: EXAM 1: 10/6/05**

<table>
<thead>
<tr>
<th>Homework #4</th>
<th>Problems to Be Graded</th>
<th>Ungraded Problems</th>
<th>Due</th>
</tr>
</thead>
</table>
| Ch 5 pp 151ff: #14, 15, 17  
Ch 6 pp 180ff: #16, 20 | Ch 5 pp 151ff: #13, 16, 19  
Ch 6 pp 180ff: #15, 23 | 10/13 |
| Homework #5 | Ch 7 pp 215ff: #12, 14, 15  
Ch 8 pp 252ff: #12, 17 | Ch 7 pp 215ff: #10, 13, 16  
Ch 8 pp 252ff: #14, 16 | 10/27 |
| Homework #6 | Ch 8 pp 252ff: #15, 19, 22  
Ch 9 pp 284ff: #14, 15 | Ch 8 pp 252ff: #20, 21  
Ch 9 pp 284ff: #12, 13, 18 | 11/3 |

**REMINDER: EXAM 2: 11/10/05**

<table>
<thead>
<tr>
<th>Homework #7</th>
<th>Problems to Be Graded</th>
<th>Ungraded Problems</th>
<th>Due</th>
</tr>
</thead>
</table>
| Ch 9 pp 284ff: #17, 21  
Ch 10 pp 328ff: #13, 16, 17 | Ch 9 pp 284 ff: #23  
Ch 10 pp 328ff: #14, 15, 18, 19 | 11/17 |
| Homework #8 | Ch 10 pp 328ff: #20i, 20ii, 20iii  
22 | Ch 10 pp 328ff: #21i, 21ii, 21iii, 23 | 12/1 |
| Homework #9 | Ch 11 pp 374ff: #14, 16, 19, 20, 23 | Ch 11 pp 374ff: #13, 15, 17, 18, 22 | 12/8 |

**REMINDER: EXAM 3:**

SELF SCHEDULED PORTION DURING EXAM WEEK  
TAKE HOME PORTION DUE AT THE END OF EXAMS