February 10, 2007

Council on Academic Affairs
W. Randy Smith, Vice Provost
Office of Academic Affairs
203 Bricker Hall, 190 N. Oval Mall

Dear members of the Council on Academic Affairs:

In October 2006, the Department of Statistics submitted the attached proposal to revise the Statistics Minor. The goal of the revision is to make the minor more accessible to students.

The enclosed packet of materials includes correspondence from the ASC Committee on Curriculum and Instruction subcommittee that reviewed the minor, program proposal, old and new minor sheets, course change request for Statistics 528, and sample syllabi.

The minor proposal was vetted by the Arts and Sciences Committee on Curriculum and Instruction (CCI) Subcommittee C in November, 2006. It was unanimously approved by the Arts and Sciences Committee on Curriculum and Instruction (CCI) at the February 9, 2007 meeting. The CCI respectfully recommends that the Council on Academic Affairs approves this minor proposal.

The contact for this program is Mike Fligner, Faculty Emeritus in the Department of Statistics. He can be reached at fligner.1@osu.edu.

Additional information, including the original version of the proposal, can be found on our website, at http://artsandsciences.osu.edu/currofe/tracking.cfm?TrackingID=355. Please let me know if you have any questions.

Sincerely,

Jessica Mercerhill
Director

CC: Mike Fligner

Enc: Correspondence
Proposal to revise the Statistics Minor
Course Change Request for Statistics 528 Minor Sheets
Sample Syllabi
Date: January 24, 2007
Subject: Proposed Undergraduate Statistics Minor
From: Jay Hobgood (Subcommittee C chair)

Subcommittee C discussed the proposed undergraduate minor in Statistics extensively during several meetings during autumn quarter. There was some initial confusion about the courses included in the minor, the prerequisites for students who wanted to do the minor and the rationale for some parts of the minor. When the subcommittee was unable to resolve the significant issues with the minor through email, a representative of Statistics was invited to meet with the subcommittee. Mike Fligner attended a meeting of Subcommittee C and addressed the concerns of the subcommittee. The subcommittee voted unanimously to approve the minor with corrections on November 28, 2006.

The principal foci of questions and discussion about the minor were:

1. Which courses are included in the Core Required Courses and in the Electives? Should Statistics 528 be listed as a Core Required Course? Should Statistics 451 be included in the Electives, or should it be Statistics 461 or 651?

2. Are the prerequisites for Statistics 529 too confusing? Note 1 in the proposal originally read:

   1. Students who receive an A in Stat 245, have done well in the AP Statistics course, or have done top A work in Stat 145 may start in Stat 529 (rather than 528). All of these courses essentially cover the same material as Stat 528.

3. Does the structure of the minor make it too difficult for students in some fields to do the minor? Some departments require Statistics courses that are not included in the Core Required Courses and that may make it difficult for their interested students to fit the minor in their curriculum.

The response from Statistics to the main concerns of Subcommittee C is to:

1. Submit a course change request revising the prerequisites for Statistics 528 to make them consistent with the minor.

2. To begin offering Statistics 451 in Autumn 2007, since the course appears in the list of Electives.

3. To examine if there are alternatives that might make it easier for students in some departments to do the minor.
REVISED VERSION OF STATISTICS MINOR – changes and rationale

CHANGES

1. Total Credit Hours
   a. Change to 21-25

2. Required courses
   a. Replace 520 with 420
   b. Replace 521 with 421
   c. Replace 641, 645 with 529, 530

3. Additional courses (choose one)
   a. Delete 632, 635, 656, 663, 673
   b. Add 451, B615, 662, 674, 675

4. Note on Grades required
   a. Add the following:
      For students pursuing the MAS in Statistics Degree (only), the grade requirements are:
      • Minimum B- for a course to be listed on the MAS degree
      • Minimum 3.0 cumulative point-hour ratio required for the MAS degree.

RATIONAL FOR THE CHANGES

1. Rationale for changing Total Credit Hours from 23-25 to 21-25:
   • Offer students more flexibility in choices
   • This credit hour range fits better with the new course choices we have available.

2. Rationale for changes in Required Courses:
   a. Replace 520 with 420. Stat 520 requirement will be replaced with Stat 420, a new course proposed in January, 2006. Stat 420 is designed strictly for undergraduates who are taking the minor, and those in the actuarial science program. The audience for 520 was a combination of undergraduates and graduate students and had too much variability in student abilities and goals to be effective. (Stat 420 has 5 credit hours – the same as Stat 520.)
   b. Replace 521 with 421. Stat 521 requirement will be replaced with Stat 421 (another new course proposed in January, 2006) for the same reasons as above. Stat 421 has 5 credit hours – the same as Stat 521.
   c. Replace 641/645 with 529/530. Stat 641 (Design and Analysis of Experiments) and 645 (Applied Regression Analysis) are theory-based courses taken by graduate students in statistics and are at a level that is too high for most undergraduates, even those pursuing quantitative/science fields. These courses also cover material relevant only for those pursuing a post graduate degree in statistics.

We will replace these course requirements with Stat 529 and 530 (Data Analysis II and III). These courses that are designed to cover the skills necessary for the broader field of data analysis. Stat 529/30 include some of the topics from Stat
641 and 645 (presented in a more streamlined and applied way). They also cover additional topics not found in Stat 641 and 645 required for the broader skills set that data analysis requires, such as Chi-Square, t distributions, and goodness of fit.
Stat 529 is 3 hours and Stat 530 is 4 credit hours, whereas Stat 641 and 645 were 5 hours each. This allows for more choice in terms of electives.

3. Rationale for changes in Additional Courses
   a. Delete 632, 635, 656, 663, 673. These courses were deemed by the Statistics Undergraduate Committee to be no longer appropriate for the statistics minor. Their implied or stated prerequisites are too high for students at the undergraduate level, and these courses are mostly attended by graduate students in statistics. (The remaining courses on the electives list are attended by a wider audience, have fewer prerequisites, and are more relevant to students who minor in statistics.)

   b. Add 451, B615, 662, 674 and 675.
451 is an undergraduate course in sampling. It is a new course which was not in existence at the time the original minor was proposed, but is at an appropriate level for the undergraduate minor.
B615 is Design and Analysis of Clinical Trials, whose level is more in line with what undergraduate students and graduate students outside of statistics can expect. It is relevant to undergraduate students in the health sciences fields.
662 is Environmental Statistics and is another graduate course whose level is in line with what undergraduate students and graduate students outside of statistics can expect. It should appeal to students in a wide range of disciplines.
674 and 675 are courses which are centered on the statistical package SAS. These two courses would be a good set of electives for students interested in adding a computing component to their minor. The level of these courses is suitable for undergraduates.

4. Rationale for Note on Grades required
With the proposed changes in the statistics minor, students who obtain the statistics minor may now also be eligible to obtain a Master in Applied Statistics with one additional academic year of coursework.

While we maintain the minimum grade of C- in any course for the statistics minor and a 2.00 cumulative point-hour ratio for those obtaining the statistics minor, we recognize that being accepted into the MAS program requires a higher level of performance in these courses.

So for students pursuing the MAS in Statistics Degree (only), the grade requirements are:
• Minimum B- for a course to be listed on the MAS degree
• Minimum 3.0 cumulative point-hour ratio required for the MAS degree.
Undergraduate Statistics Minor

A demonstrated knowledge and working understanding of basic statistical techniques and methods is a critical element in today's competitive marketplace. The undergraduate minor in statistics is designed as a valuable asset to enhance most any undergraduate major. Students with a statistics minor may also be eligible to obtain a Master of Applied Statistics (M.A.S.) with one additional academic year of coursework.

Undergraduate Minor in Statistics Requirements

To achieve the statistics minor, the student must successfully complete the requirements listed in (1) and (2) below. The total number of credit hours required for the statistics minor is 21-25.

(1) Take and pass with a grade of C- or above:

<table>
<thead>
<tr>
<th>Core Required Courses (17 Hours)</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>420(5)</td>
<td>Introduction to Mathematical Statistics I</td>
</tr>
<tr>
<td>421(5)</td>
<td>Introduction to Mathematical Statistics II</td>
</tr>
<tr>
<td>529(3)</td>
<td>Data Analysis II</td>
</tr>
<tr>
<td>530(4)</td>
<td>Data Analysis III</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Electives (At least 4 Hours)</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>451(5)</td>
<td>Statistical Foundations of Survey Research</td>
</tr>
<tr>
<td>661(5)</td>
<td>Applied Nonparametric Statistics</td>
</tr>
<tr>
<td>662(3)</td>
<td>Environmental Statistics</td>
</tr>
<tr>
<td>665(4)</td>
<td>Discrete Data Analysis</td>
</tr>
<tr>
<td>674(2)</td>
<td>Data Management and Presentation I</td>
</tr>
<tr>
<td>675(2)</td>
<td>Data Management and Presentation II</td>
</tr>
<tr>
<td>B615(3)</td>
<td>(Biostatistics) Design and Analysis of Clinical Trials</td>
</tr>
</tbody>
</table>

(2) Maintain a minimum cumulative grade point-hour ratio of 2.00 in the statistics minor.

Sample Programs

Sample Program 1:

<table>
<thead>
<tr>
<th></th>
<th>AU</th>
<th>WI</th>
<th>SP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sophomore</td>
<td>528*</td>
<td>529</td>
<td>530</td>
</tr>
<tr>
<td>Junior Year</td>
<td></td>
<td>420</td>
<td>421</td>
</tr>
<tr>
<td>Senior Year</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sample Program 2:

<table>
<thead>
<tr>
<th></th>
<th>AU</th>
<th>WI</th>
<th>SP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sophomore</td>
<td>420</td>
<td></td>
<td>421</td>
</tr>
<tr>
<td>Junior Year</td>
<td>528*</td>
<td>529</td>
<td>530</td>
</tr>
<tr>
<td>Senior Year</td>
<td></td>
<td>665</td>
<td></td>
</tr>
</tbody>
</table>
Sample Program 3:

<table>
<thead>
<tr>
<th></th>
<th>AU</th>
<th>WI</th>
<th>SP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Junior Year</td>
<td>528*</td>
<td>529, 674</td>
<td>530, 675</td>
</tr>
<tr>
<td>Senior Year</td>
<td>420</td>
<td></td>
<td>421</td>
</tr>
</tbody>
</table>

* 528 is not included in the minor but 528 or equivalent is required to take 529. See Note 1 below.

Notes:

1. Students who receive a A in Stat 245, have done well in the AP Statistics course, or have done top A work in Stat 145 may start with Stat 529 (rather than 528). All of these courses essentially cover the same material as Stat 528.

2. Note that Math 254 is a prerequisite for Stat 420. It is expected that students take the necessary math courses to complete this prerequisite during their Freshman/Sophomore years before taking Stat 420 in their Junior year.

3. Students who have already taken Math 254 would typically take the Stat 420-421 sequence in their sophomore year and the 528-530 sequence in their Junior year (see Sample Program 2 above.)

4. Stat 520-521 may be substituted for Stat 420-421.

5. Students who obtain the statistics minor may also be eligible to obtain a Master of Applied Statistics Degree (M.A.S.) with one additional academic year of coursework. While a minimum grade of C- is required in any course in the statistics minor and a 2.00 cumulative point-hour ratio is required for the statistics minor, being accepted into the M.A.S. program requires a higher level of performance in these courses.

For students pursuing the M.A.S. in Statistics Degree (only), the grade requirements are:
   - Minimum B- for any courses to be counted towards the M.A.S. degree.
   - Minimum 3.0 cumulative point-hour ratio required for the M.A.S. degree.

Application Procedure:

Students intending to apply for the undergraduate statistics minor should fill out a Minor Program of Study Form and submit it to the Undergraduate Minor Program Coordinator in the Department of Statistics by the beginning of their junior year. After it has been approved, you must file this form with your college or academic counselor. For further information, contact Dr. Deborah Rumsey, Statistics Undergraduate Minor Program Coordinator, at rumsey@stat.ohio-state.edu.
The Ohio State University
 Colleges of the Arts and Sciences
 College of Mathematical and Physical Sciences

Statistics Minor (Stat, 458)

Department of Statistics
404 Cockins Hall, 1958 Neil Avenue
Columbus, OH 43210-1247; 614-292-2866
http://www.stat.osu.edu

Please note that the University does not offer an undergraduate major in statistics.

The statistics minor consists of 23-25 credit hours as listed below. After the faculty adviser in the Department of Statistics has approved your Minor Program Form, you must file the form with your college or school counselor. For further information, contact the department.

**Required courses**
Statistics 520, 521, 641, 645

**Additional courses (choose one)**
Statistics 632, 635, 651, 856, 661, 663, 664, 665, 673

---

**Statistics minor program guidelines**

The following guidelines govern this minor:

**Required for graduation**  No

**Credit hours required**  A minimum of 23-25

**Transfer credit hours allowed**  A maximum of 10

**Overlap with the GEC**  Permitted

**Overlap with the major**  Not allowed and
- The minor must be in a different subject than the major.
- The same courses cannot count on the minor and on the major.

**Overlap between minors**  Each minor completed must contain 20 unique hours.

**Grades required**
- Minimum C- for a course to be listed on the minor.
- Minimum 2.00 cumulative point-hour ratio required for the minor.
- Course work graded Pass/Non-Pass cannot count on the minor.

**Approval required**  The minor program description sheet indicates if the minor course work must be approved by:
- The academic unit offering the minor

**Filing the minor program form**  The minor program form must be filed at least by the time the graduation application is submitted to a college/school counselor.

**Changing the minor**  Once the minor program is filed in the college office, any changes must be approved by:
- The academic unit offering the minor
The Ohio State University
Colleges of the Arts and Sciences
College of Mathematical and Physical Sciences

Statistics Minor (Stat. 458)

Department of Statistics
464 Cockins Hall, 1968 Nell Avenue
Columbus, OH 43210-1247; 614-292-2866
http://www.stat.ohio-state.edu

Please note that the University does not offer an undergraduate major in statistics.

A demonstrated knowledge and working understanding of basic statistical techniques and methods is a critical element in today's competitive marketplace. The undergraduate minor in statistics is designed as a valuable asset to enhance most any undergraduate major. Students with a statistics minor may also be eligible to obtain a Master of Applied Statistics (M.A.S.) with one additional academic year of coursework.

The statistics minor consists of 21-25 credit hours as listed below. After the faculty advisor in the Department of Statistics has approved your Minor Program Form, you must file the form with your college or school counselor. For further information, contact the department.

Core Required courses (17 hours)

Statistics
420: Introduction to Mathematical Statistics I (5)
421: Introduction to Mathematical Statistics II (5)
529: Data Analysis I (3)
530: Data Analysis II (4)

Electives (at least 4 hours)

Statistics
451: Statistical Foundations of Survey Research (5)
661: Applied Nonparametric Statistics (5)
662: Environmental Statistics (3)
665: Discrete Data Analysis (4)
B615: (Biostatistics) Design and Analysis of Clinical Trials (3)
674: Data Management and Presentation I (2)
675: Data Management and Presentation II (2)

*529 (or equivalent) is not required for the minor but is a prerequisite to 529. See Statistics Minor advisor for more information.

Statistics minor program guidelines

The following guidelines govern this minor.

Required for graduation: No.

Credit hours required: A minimum of 21-25

Transfer credit hours allowed: A maximum of 10

Overlap with the GEC: Permitted

Overlap with the major: Not allowed and
• The minor must be in a different subject than the major.
• The same courses cannot count on the minor and on the major.

Overlap between minors: Each minor completed must contain 20 unique hours.

Grades required
• Minimum C- for a course to be listed on the minor.
• Minimum 2.00 cumulative point-hour ratio required for the minor.
• Course work graded Pass/Non-Pass cannot count on the minor.

Approval required: The minor program description sheet indicates if the minor course work must be approved by:
• The academic unit offering the minor

Filing the minor program form: The minor program form must be filed at least by the time the graduation application is submitted to a college/school counselor.

Changing the minor: Once the minor program is filed in the college office, any changes must be approved by:
• The academic unit offering the minor
The Ohio State University
Colleges of the Arts and Sciences Course Change Request

Department of: Statistics
Academic Unit:
Statistics
Book 3 Listing (e.g., Portuguese) 528
Course Number

Summer X Autumn Winter Spring Year 2007

Proposed effective date: choose one quarter and put an "X" after it, and fill in the year. See the OAA curriculum manual for deadlines.

A. Course Offerings Bulletin Information. Follow instructions in the OAA curriculum manual. Before you fill out the "Present Course" information, be sure to check the latest edition of the Course Offerings Bulletin and subsequent Circulating Forms. You may find that the changes you need have already been made or that additional changes are needed. If the course offered is less than quarter or term, please also complete the Flexibly Scheduled/OffCampus/Workshop Request form.

COMPLETE ALL ITEMS THIS COLUMN
Present Course

1. Book 3 Listing: Statistics
2. Number: 528
3. Fall Title: Data Analysis 1
4. 18-Char. Transcript Title: Data Analysis 1
5. Level and Credit Hours: U G 3
6. Description: Non-calculus treatment of descriptive statistics, statistical inference, goodness of fit, use of t, X2 in one sample situation.
   (25 words or less)
7. Ctrs. Offered: Su Au Wi
8. Distribution of Contact Time: 3 hr lab
   (e.g., 3 cl, 1 3-hr lab)
9. Prerequisite(s): permission of instructor or grad standing. Not open to students with more than 6 hrs in statistics
10. Exclusion:
   (Not open to....)
11. Repeatable to a maximum of
   credits.
12. Off-Campus Field Experience
13. Cross-listed with:
14. Is this a GEC course? no
15. Grade option (circle): Ltr S/U P
   If P graded, what is the last course in the series?
16. Is an honors version of this course available? Y □ N □
   Is an Embedded Honors version of this course available? Y □ N □

COMPLETE ONLY THOSE ITEMS THAT CHANGE
Changes Requested

1. 
2. 
3. 
4. 
5. 
6. 
7. 
8. 
9. Not open to students who have completed Statistics 145 or Statistics 245.
10. 
11. 
12. 
13. 
14. 
15. 
16. 
17.
B. General Information

1. Do you want the prerequisites enforced electronically (see the OAA manual for what can be enforced)?
   no

2. Does this course currently satisfy any GEC requirement, if so indicate which category?
   no

3. What other units require this course? Have these changes been discussed with those units?
   no

4. Have these changes been discussed with academic units that might have a jurisdictional interest in the subject matter?
   Attach relevant letters.
   n/a

5. Is the request contingent upon other requests, if so, list the requests?
   n/a

6. Purpose of the proposed change. (If the proposed change affects the content of the course, attach a revised syllabus and course objectives and e-mail to ascurofc@osu.edu.)
   To update the prerequisites to reflect current status of the course.

7. Please list Majors/Minors affected by the proposed change. Attach revisions of all affected programs. This course is (check one): ☐ Required on major(s)/minor(s) ☐ A choice on major(s)/minor(s)
   ☐ An elective within major(s)/minor(s) ☐ A general elective

8. Describe any changes in library, equipment or other teaching aids needed as a result of the proposed change or if the proposed change involves budgetary adjustments, describe the method of funding:
   n/a

---

Approval Process The signatures on the lines in ALL CAPS (e.g. ACADEMIC UNIT) are required.

1. Academic Unit Undergraduate Studies Committee Chair
   Printed Name: Michael Flugman
   Date: 11/28/06

2. Academic Unit Graduate Studies Committee Chair
   Printed Name: Elizabeth A. Stasny
   Date: 11/28/06

3. ACADEMIC UNIT CHAIR/DIRECTOR
   Printed Name: Barbara Ryder
   Date: 1/29/06

4. After the Academic Unit Chair/Director signs the request, forward the form to the ASC Curriculum Office, 105 Brown Hall, 190 West 17th Ave. or fax it to 688-5678. Attach the syllabus and any supporting documentation in an e-mail to ascurofc@osu.edu. The ASC Curriculum Office will forward the request to the appropriate committee.

5. COLLEGE CURRICULUM COMMITTEE
   Printed Name: Edward Nelson
   Date: 2/5/07

6. ARTS AND SCIENCES EXECUTIVE DEAN
   Printed Name: Edward Nelson
   Date: 2/5/07

7. Graduate School (if appropriate)
   Printed Name: Edward Nelson
   Date: 2/5/07

8. University Honors Center (if appropriate)
   Printed Name: Edward Nelson
   Date: 2/5/07

9. Office of International Affairs (study tours only)
   Printed Name: Edward Nelson
   Date: 2/5/07

10. ACADEMIC AFFAIRS
    Printed Name: Edward Nelson
    Date: 2/5/07

---

Colleges of the Arts and Sciences Curriculum Office 10-02-05
Stat 528 (Autumn 2006)
Data Analysis I

Lecturer
Peter F. Craigmile, Ph.D.
pfc@stat.ohio-state.edu
Office hours in 325 Cockins Hall: Mon, Wed, Fri 12.30-1.20 pm, or by appointment.

Grader
Jessica Kohlschmidt
jessica@stat.ohio-state.edu
Office hours: By appointment only.

Lectures
Mon, Wed and Fri from 1.30-2.18 pm in Cockins Hall (CH) 312.
There will be no classes on Fri 27 Oct, Fri 10 Nov (Veteran's day), and Fri 24 Nov (Thanksgiving).
Lecture notes can be downloaded from the class web site at:
http://www.stat.ohio-state.edu/~pfc/teaching/528.

Aims
Stat 528 is the first in a three course sequence in Data Analysis (Stat 528, 529 and 530). In this non-
calculus based course we will study data collection, analysis, and preliminary statistical inference. More specifically, the course covers summaries of data, design of experiments, probability, confidence intervals, tests of hypothesis, and other statistical inference as time permits. By the end of the course you should be able to design a simple experiment and analyze the data obtained using the statistical methods that we cover in class.

Prequisites: Not open to students with more than 5 credit hours in Statistics. The sequence is intended for students with "limited" formal mathematics background (a solid grounding in high school algebra is beneficial) although, in terms of data analysis and interpretation, the conceptual level of the course is high. While most of the students in the course are graduate students (it is a required course in many programs), it is certainly an appropriate sequence for junior and senior level undergraduates.

Required text
Introduction to the Practice of Statistics, Fifth Edition

Reading
Please read the book as the course progresses, as I may not cover everything in class. The goal of statistics is not calculation, but gaining understanding from numbers. Thus course should be regarded as a research methods course and not a mathematics course! This means that the correct numerical answer will only receive partial credit. The remainder of the credit will be available for choosing the best method of solution and explaining why the method is appropriate. You will also need to interpret your answers in the light of the practical problem.
Evaluation
Homework    Midterm exam    Final exam
20%        35%          45%

Homework will be due at the beginning of class on the day it is due. No late homework will be accepted. You are encouraged to work together on the homework, but do not copy any part of a homework. Each student must produce his/her own homework to be handed in. Feel free to ask me for help after you have made an attempt of the questions. The grading for the course does not have the time to provide detailed explanations on each question that he/she grades. To make up for this, I will endeavor to make homework solutions detailed enough to allow you to understand how the question could be approached. Homework solutions will be available on the class web site.

Homework preparation rules: Put your name and the homework assignment number on the top right-hand corner of every page. All homework must be submitted on 8.5"x11" paper. Staple the pages together. We are not responsible for lost pages. Submit the problems in order, making sure that the computer output and discussion is placed together (do not put the computer output at the end of homework). Raw computer output is not acceptable. Make it clear what parts of the output are relevant and show how they answer the questions posed in the homework.

Exams: There will be one midterm and one final exam:

<table>
<thead>
<tr>
<th>Exam</th>
<th>Date</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Midterm</td>
<td>Thu 2 Nov</td>
<td>To be arranged</td>
</tr>
<tr>
<td>Final</td>
<td>Wed 6 Dec</td>
<td>1:30 - 3:18</td>
</tr>
</tbody>
</table>

Both exams are closed book/closed notes. Calculators are allowed—personal digital assistants and cellphones are not. You may bring a single 8.5"x11" page of formulae to the midterm, and two pages of formulae to the final. The midterm will cover the material up to and including Mon 30 Oct and the final will cover all the material for the course. There will be no make-up exams.

Computing
This class requires you to use the statistical software package called MINITAB.
More details will be given in class and on the class web site.

Adds
All ADDS or SECTION CHANGES are done through BRUTUS the first week of the quarter (ends Fri 22 Sep). You may attend the class you hope to enroll in the first week, but you may not take a seat from an enrolled student. ADDS or SECTION CHANGES for scheduling conflicts (graduating seniors, work conflicts) will be given priority. Documentation will be required (in the form of a letter, on letterhead, from an advisor/employer), which explains, in detail, the circumstances and what action is being requested. Please go to 405C Cockins Hall for assistance in resolving the conflict. Starting at 7:30 a.m. Tues 26 Sep, in 405C Cockins Hall adds will be processed on a first come first serve basis if there are any openings. The instructor will NOT under any circumstances sign paperwork regarding course admission.
Special accommodations

Any student who feels they may need an accommodation based on the impact of a disability should contact the instructor privately to discuss your specific needs. You should also contact the Office of Disability Services at (292-3307) in 150 Pomerene Hall to coordinate reasonable accommodations for students with documented disabilities.

Academic misconduct

Cheating, plagiarism and other forms of academic dishonesty will not be tolerated. Any violation will be prosecuted to the fullest extent as set out in University Rule 3335-31-02.

Disclaimer

This syllabus should be taken as a fairly reliable guide for the course content. However, you cannot claim any rights from it and in particular I reserve the right to change due dates or the methods of assessment. Official announcements will ALWAYS be those made in class.
INTRODUCTION TO MATHEMATICAL STATISTICS I
Stat 420
Proposed Syllabus

Instructor: Dr. Deborah Rumsey
Office: 227 Cockins Hall
Office Phone: 292-0779

E-mail: rumsey-johnson.1@osu.edu

Text: Mathematical Statistics with Applications (7th Edition), by John E. Freund

Course Objectives: To understand and demonstrate the basic ideas in mathematical statistics, including probability, discrete and continuous distributions and densities, mathematical expectation, functions of random variables, transformation techniques, sampling distributions, and order statistics.

Course Format:
5 credit hours comprised of 4 1-hr lectures and 1-hr recitation per week.

Prerequisites:
Math 254 or permission of instructor.

Grading Policy:
Your course grade will be based on homework assignments, two midterms, and a comprehensive final exam. For each midterm you are allowed to bring one standard size sheet of notes (front and back); for the final you are allowed two standard size sheets of notes (front and back). Also bring a calculator to all exams.

Your final course grade will be based on the following weighting of assessment components:

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework</td>
<td>30%</td>
</tr>
<tr>
<td>Midterm 1</td>
<td>20%</td>
</tr>
<tr>
<td>Midterm 2</td>
<td>20%</td>
</tr>
<tr>
<td>Final exam</td>
<td>30%</td>
</tr>
</tbody>
</table>

Grading Scale:
We expect final course grades to be assigned based on the grading scale below. If we find that a curve is needed, we will give one at the end. We will not drop/replace the lowest midterm score. There will be no extra credit given in this class.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td>930 - 1000</td>
</tr>
<tr>
<td>A</td>
<td>900 - 929</td>
</tr>
<tr>
<td>A-</td>
<td>890 - 899</td>
</tr>
<tr>
<td>B+</td>
<td>870 - 899</td>
</tr>
<tr>
<td>B</td>
<td>830 - 869</td>
</tr>
<tr>
<td>B-</td>
<td>800 - 829</td>
</tr>
<tr>
<td>C+</td>
<td>770 - 799</td>
</tr>
<tr>
<td>C</td>
<td>730 - 769</td>
</tr>
<tr>
<td>C-</td>
<td>700 - 729</td>
</tr>
<tr>
<td>D+</td>
<td>670 - 699</td>
</tr>
<tr>
<td>D</td>
<td>600 - 669</td>
</tr>
<tr>
<td>F</td>
<td>below 600</td>
</tr>
</tbody>
</table>
### Stat 420 Proposed Course Schedule and Textbook Readings
(based on a typical Winter quarter schedule with 4 lectures per week on M, T, W, Th)

<table>
<thead>
<tr>
<th>Day</th>
<th>Date</th>
<th>Lecture Topics</th>
<th>Textbook Readings</th>
</tr>
</thead>
<tbody>
<tr>
<td>W</td>
<td>1/3</td>
<td>Intro to probability; Review of combinations and permutations</td>
<td>Ch 1, 2.1-2.4</td>
</tr>
<tr>
<td>Th</td>
<td>1/4</td>
<td>Probability Rules, Conditional Probability</td>
<td>2.4-2.5</td>
</tr>
<tr>
<td>F</td>
<td>1/5</td>
<td>Conditional probability, Independent Events</td>
<td>2.6-2.7</td>
</tr>
<tr>
<td>M</td>
<td>1/8</td>
<td>Bayes' Theorem</td>
<td>2.8</td>
</tr>
<tr>
<td>W</td>
<td>1/10</td>
<td>Random variables and probability distributions</td>
<td>3.1-3.2</td>
</tr>
<tr>
<td>Th</td>
<td>1/11</td>
<td>Continuous random variables and probability density functions</td>
<td>3.3-3.4</td>
</tr>
<tr>
<td>F</td>
<td>1/12</td>
<td>Multivariate distributions</td>
<td>3.5</td>
</tr>
<tr>
<td>M</td>
<td>1/15</td>
<td>No classes-holiday</td>
<td>---</td>
</tr>
<tr>
<td>W</td>
<td>1/17</td>
<td>Marginal and conditional distributions</td>
<td>3.6-3.7</td>
</tr>
<tr>
<td>Th</td>
<td>1/18</td>
<td>Expected value</td>
<td>4.1-4.2</td>
</tr>
<tr>
<td>F</td>
<td>1/19</td>
<td>Moments and moment-generating functions</td>
<td>4.3, 4.5</td>
</tr>
<tr>
<td>M</td>
<td>1/22</td>
<td>Moment generating functions, product moments</td>
<td>4.5, 4.6</td>
</tr>
<tr>
<td>W</td>
<td>1/24</td>
<td>Product moments</td>
<td>4.6</td>
</tr>
<tr>
<td>Th</td>
<td>1/25</td>
<td>Review for Midterm 1</td>
<td>--</td>
</tr>
<tr>
<td>F</td>
<td>1/26</td>
<td>Midterm 1</td>
<td>1.1-4.6</td>
</tr>
<tr>
<td>M</td>
<td>1/29</td>
<td>Moments of linear combinations of random variables</td>
<td>4.7</td>
</tr>
<tr>
<td>W</td>
<td>1/31</td>
<td>Conditional expectations</td>
<td>4.8</td>
</tr>
<tr>
<td>Th</td>
<td>2/1</td>
<td>Discrete uniform, Bernoulli distributions</td>
<td>5.1-5.3</td>
</tr>
<tr>
<td>F</td>
<td>2/2</td>
<td>Binomial distribution</td>
<td>5.4</td>
</tr>
<tr>
<td>M</td>
<td>2/5</td>
<td>Negative binomial and geometric distributions</td>
<td>5.5</td>
</tr>
<tr>
<td>W</td>
<td>2/7</td>
<td>Hypergeometric distribution</td>
<td>5.6</td>
</tr>
<tr>
<td>Th</td>
<td>2/8</td>
<td>Poisson distribution</td>
<td>5.7</td>
</tr>
<tr>
<td>F</td>
<td>2/9</td>
<td>Multinomial distribution</td>
<td>5.8</td>
</tr>
<tr>
<td>M</td>
<td>2/12</td>
<td>Continuous density functions, uniform distribution</td>
<td>6.1-6.2</td>
</tr>
<tr>
<td>W</td>
<td>2/14</td>
<td>Gamma, exponential distributions chi-square distributions</td>
<td>6.3</td>
</tr>
<tr>
<td>Th</td>
<td>2/14</td>
<td>Beta, Weibull and Pareto distributions</td>
<td>6.4</td>
</tr>
<tr>
<td>F</td>
<td>2/16</td>
<td>Normal distribution</td>
<td>6.5</td>
</tr>
<tr>
<td>M</td>
<td>2/19</td>
<td>Normal approximation to binomial</td>
<td>6.6</td>
</tr>
<tr>
<td>-----</td>
<td>------</td>
<td>---------------------------------</td>
<td>-----</td>
</tr>
<tr>
<td>W</td>
<td>2/21</td>
<td>Review for Midterm 2</td>
<td>---</td>
</tr>
<tr>
<td>Th</td>
<td>2/22</td>
<td><strong>Midterm 2</strong></td>
<td>4.7-6.6</td>
</tr>
<tr>
<td>F</td>
<td>2/23</td>
<td>Functions of random variables: distribution function technique</td>
<td>7.1-7.2</td>
</tr>
<tr>
<td>M</td>
<td>2/26</td>
<td>Transformation techniques: one variable (including lognormal distribution)</td>
<td>7.3</td>
</tr>
<tr>
<td>W</td>
<td>2/28</td>
<td>Transformation techniques: one and two variables</td>
<td>7.3, 7.4</td>
</tr>
<tr>
<td>Th</td>
<td>3/1</td>
<td>Transformation techniques: two variables</td>
<td>7.4</td>
</tr>
<tr>
<td>F</td>
<td>3/2</td>
<td>Moment generating function technique</td>
<td>7.5</td>
</tr>
<tr>
<td>M</td>
<td>3/5</td>
<td>Sampling distributions; sampling distribution of the mean</td>
<td>8.1-8.2</td>
</tr>
<tr>
<td>W</td>
<td>3/7</td>
<td>Sampling distribution of the mean; central limit theorem</td>
<td>8.2</td>
</tr>
<tr>
<td>Th</td>
<td>3/8</td>
<td>Order Statistics</td>
<td>8.7</td>
</tr>
<tr>
<td>F</td>
<td>3/9</td>
<td>Review for Final Exam</td>
<td>All material from course</td>
</tr>
<tr>
<td>TBA</td>
<td>TBA</td>
<td><strong>Final Exam (Comprehensive)</strong></td>
<td>All material from course</td>
</tr>
</tbody>
</table>
INTRODUCTION TO MATHEMATICAL STATISTICS II
Stat 421
Proposed Syllabus

Instructor: Dr. Deborah Rumsey
Office: 227 Cockins Hall
Office Phone: 292-0779

E-mail: rumsey-johnson.1@osu.edu

Text: Mathematical Statistics with Applications (7th Edition), by John E. Freund

Course Objectives: To understand and demonstrate more basic ideas in mathematical statistics, including calculation and evaluation of point estimators, interval estimation, Neyman-Pearson lemma, uniformly most powerful tests, likelihood ratio tests, chi-square, F, and nonparametric tests.

Course Format:
5 credit hours comprised of 4 1-hr lectures and 1-hr recitation per week.

Prerequisites:
Stat 420.

Grading Policy:
Your course grade will be based on homework assignments, two midterms, and a comprehensive final exam. For each midterm you are allowed to bring one standard size sheet of notes (front and back); for the final you are allowed two standard size sheets of notes (front and back). Also bring a calculator to all exams.

Your final course grade will be based on the following weighting of assessment components:

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework</td>
<td>30%</td>
</tr>
<tr>
<td>Midterm 1</td>
<td>20%</td>
</tr>
<tr>
<td>Midterm 2</td>
<td>20%</td>
</tr>
<tr>
<td>Final exam</td>
<td>30%</td>
</tr>
</tbody>
</table>

Grading Scale:
We expect final course grades to be assigned based on the grading scale below. If we find that a curve is needed, we will give one at the end. We will not drop/replace the lowest midterm score. There will be no extra credit given in this class.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>930−1000</td>
</tr>
<tr>
<td>A−</td>
<td>900−929</td>
</tr>
<tr>
<td>B</td>
<td>870−899</td>
</tr>
<tr>
<td>B−</td>
<td>800−829</td>
</tr>
<tr>
<td>C</td>
<td>770−799</td>
</tr>
<tr>
<td>C−</td>
<td>700−729</td>
</tr>
<tr>
<td>D</td>
<td>670−699</td>
</tr>
<tr>
<td>D−</td>
<td>600−669</td>
</tr>
<tr>
<td>F</td>
<td>below 600</td>
</tr>
</tbody>
</table>
# Stat 421 Proposed Course Schedule and Textbook Readings
(based on a typical Spring quarter schedule with 4 lectures per week on M, W, Th, F)

<table>
<thead>
<tr>
<th>Day</th>
<th>Date</th>
<th>Lecture Topics</th>
<th>Textbook Readings</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>3/26</td>
<td>Intro and review of 420 topics</td>
<td>---</td>
</tr>
<tr>
<td>W</td>
<td>3/28</td>
<td>Intro and review of 420 topics</td>
<td>---</td>
</tr>
<tr>
<td>Th</td>
<td>3/29</td>
<td>Intro to point estimation</td>
<td>10.1, 10.2</td>
</tr>
<tr>
<td>F</td>
<td>3/30</td>
<td>Efficiency</td>
<td>10.3</td>
</tr>
<tr>
<td>M</td>
<td>4/2</td>
<td>Consistency</td>
<td>10.4</td>
</tr>
<tr>
<td>W</td>
<td>4/4</td>
<td>Sufficiency</td>
<td>10.5</td>
</tr>
<tr>
<td>Th</td>
<td>4/5</td>
<td>Robustness</td>
<td>10.6</td>
</tr>
<tr>
<td>F</td>
<td>4/6</td>
<td>Method of moments estimation</td>
<td>10.7</td>
</tr>
<tr>
<td>M</td>
<td>4/9</td>
<td>Maximum likelihood estimation</td>
<td>10.8</td>
</tr>
<tr>
<td>W</td>
<td>4/11</td>
<td>Estimation of means</td>
<td>11.1-11.2</td>
</tr>
<tr>
<td>Th</td>
<td>4/12</td>
<td>Estimation of difference of two means</td>
<td>11.3</td>
</tr>
<tr>
<td>F</td>
<td>4/13</td>
<td>Estimation of proportions</td>
<td>11.4</td>
</tr>
<tr>
<td>M</td>
<td>4/16</td>
<td>Estimation difference of two proportions</td>
<td>11.5</td>
</tr>
<tr>
<td>W</td>
<td>4/18</td>
<td>Estimation of variances</td>
<td>11.6</td>
</tr>
<tr>
<td>Th</td>
<td>4/19</td>
<td>Estimation of the ratio of two variances</td>
<td>11.7</td>
</tr>
<tr>
<td>F</td>
<td>4/20</td>
<td>Review for Midterm 1</td>
<td>---</td>
</tr>
<tr>
<td>M</td>
<td>4/23</td>
<td>Midterm 1</td>
<td>10.1-11.7</td>
</tr>
<tr>
<td>W</td>
<td>4/25</td>
<td>Testing a hypothesis</td>
<td>12.1-12.2</td>
</tr>
<tr>
<td>Th</td>
<td>4/26</td>
<td>Losses and risks</td>
<td>12.3</td>
</tr>
<tr>
<td>F</td>
<td>4/27</td>
<td>Neyman-Pearson lemma</td>
<td>12.4</td>
</tr>
<tr>
<td>M</td>
<td>4/30</td>
<td>Neyman-Pearson lemma</td>
<td>12.4</td>
</tr>
<tr>
<td>W</td>
<td>5/2</td>
<td>The power function of a test</td>
<td>12.5</td>
</tr>
<tr>
<td>Th</td>
<td>5/3</td>
<td>Likelihood ratio tests</td>
<td>12.6</td>
</tr>
<tr>
<td>F</td>
<td>5/4</td>
<td>Likelihood ratio tests</td>
<td>12.6</td>
</tr>
<tr>
<td>M</td>
<td>5/7</td>
<td>Hypothesis tests concerning means</td>
<td>13.1-13.2</td>
</tr>
<tr>
<td>W</td>
<td>5/9</td>
<td>Tests concerning difference of two means</td>
<td>13.3</td>
</tr>
<tr>
<td>Th</td>
<td>5/10</td>
<td>Tests concerning variances</td>
<td>13.4</td>
</tr>
<tr>
<td>F</td>
<td>5/11</td>
<td>Tests concerning proportions</td>
<td>13.5</td>
</tr>
<tr>
<td>M</td>
<td>5/14</td>
<td>Tests concerning differences among k proportions</td>
<td>13.6</td>
</tr>
<tr>
<td>W</td>
<td>5/16</td>
<td>Analysis of rxc table</td>
<td>13.7</td>
</tr>
<tr>
<td>Th</td>
<td>5/17</td>
<td>Goodness of fit tests</td>
<td>13.8</td>
</tr>
<tr>
<td>F</td>
<td>5/18</td>
<td>Review for Midterm 2</td>
<td>11.6-13.6</td>
</tr>
<tr>
<td>M</td>
<td>5/21</td>
<td>Midterm 2</td>
<td>11.6-13.6</td>
</tr>
<tr>
<td>W</td>
<td>5/23</td>
<td>Nonparametric statistics; sign test</td>
<td>16.1-16.2</td>
</tr>
<tr>
<td>Th</td>
<td>5/24</td>
<td>Signed rank test</td>
<td>16.3</td>
</tr>
<tr>
<td>Day</td>
<td>Date</td>
<td>Event</td>
<td></td>
</tr>
<tr>
<td>-----</td>
<td>--------</td>
<td>------------------------------------</td>
<td>-------</td>
</tr>
<tr>
<td>F</td>
<td>5/25</td>
<td>Rank-sum test: U test</td>
<td>16.4</td>
</tr>
<tr>
<td>M</td>
<td>5/28</td>
<td>No Class-Holiday</td>
<td>---</td>
</tr>
<tr>
<td>W</td>
<td>5/30</td>
<td>Rank-sum tests: H test</td>
<td>16.5</td>
</tr>
<tr>
<td>Th</td>
<td>5/31</td>
<td>Review for Final Exam</td>
<td>All material from course</td>
</tr>
<tr>
<td>F</td>
<td>6/1</td>
<td>Review for Final Exam</td>
<td>All material from course</td>
</tr>
</tbody>
</table>
STAT 529: Data Analysis II
Spring 2006

Instructor: Xinyi Xu
   Office: 440G Cockins Hall
   Email: xinyi@stat.ohio-state.edu
   Office Hours: MW 2:30-3:30pm

Grader: Jessica Kohlschmidt
   Office: 403F Cockins Hall
   Email: jessica@stat.ohio-state.edu
   Office Hours: MW 12:30-1:30pm

Lecture Hours: MWF 1:30-2:18pm, Cockins Hall 312

Prerequisites: Statistics 528 or permission of the instructor.


Website: \url{http://stat.ohio-state.edu/~xinyi/stat529/index.html}
   Many course materials will be made available here. These will include homework assignments and solutions, a select set of course handouts, in addition to any announcements that may need to be made.

Statistical Computing: This class requires you to use the statistical software package MINITAB. You can find it in many computer labs on campus. More details will be given in class.

Course Description:
Statistics 529 is the second course in a three quarter sequence in Data Analysis. We assume that students are familiar with organizing and summarizing data, the nature of relationships between variables, sampling distributions and the underlying rationale for hypothesis tests and confidence intervals. Statistics 529 and 530 will cover many of the common statistical methods that you will encounter when reading journal articles in your field, or that you will need to analyze data that you have collected. When covering any statistical method, our goal is for you to (1) understand the assumptions of the method and be able to check them, (2) be able to carry out the necessary computations on MINITAB, (3) be able to describe your results using correct statistical "jargon", and (4) be able to interpret the results in a way that is
meaningful to others in your field. We will try to accomplish these goals through homework and interactive classroom sessions. Core topics covered include: two-sample comparison, ANOVA (Analysis of Variance), and simple linear regression.

Grading:

- Homework: 20%
- Midterm: 35%
- Comprehensive Final: 45%

Homework:

Homework will be collected approximately weekly (making for about 7 homework assignments). Homework assignments and solutions will be posted on the course webpage. NO late homework will be accepted. A subset of problems from each assignment will be graded. Many of the analysis for the course will be done using MINITAB. When you put together your homework solutions, be sure to cut-and-paste so that the grader can follow your work. You may lose points if the grader has trouble following the thread of your solution.

Exams: There will be one midterm and one final exam.
- Midterm (tentative): April 28, Friday, 1:30-2:18pm
- Final: June 7, Wednesday, 1:30-3:18pm
- Both exams will be in-class, close-book; however, you will be allowed a formula sheet (2 sides of 8.5" × 11" sheet of paper) and a calculator.
- There will be NO makeup exams. The only excuses for missing an exam are a serious illness or a major family crisis. Proof must be provided in the form of an official document. A note from a family member alone is not sufficient.
- You have until one week after receiving your grades on the exams to dispute the grade; the same applies to any homework grade. Note that when asking for a question to be re-graded, the entire assignment/exam may be re-graded, and so you run the risk of losing more points than you gain back.
- It is recommended that exams be done in pen. Use of pencil voids the students right to request a re-grade of the exam.

Academic Misconduct: Please help us to maintain an academic environment of mutual respect, fair treatment, and personal growth. You are expected to produce original and independent work for exams. Although students are often encouraged to work together on homework assignments, each student is to submit her/his own written work in her/his own words. Academic misconduct will not be tolerated and will be dealt with procedurally in accordance with University Rule 3335-31-02.

Note: Instructor reserves the right to make any changes considered academically advisable.
Stat 530
Spring 2006
Introduction to Statistical Data Analysis
Monday, Wednesday, Friday 10:00 - 11:18, CH 312.

Instructor:
Professor Jiaju Hu
Office: 204D Cockins Hall
e-mail: huj1@ohio.edu
Phone: 292-7663
Office Hours: Friday 1:30 - 2:18 or by appointment

TA: Lib Yu
e-mail: lyu@stat.ohio-state.edu
Office: 50-48 Cockins Hall
Phone: 292-5347
Office Hours: Tuesday 3:30-5:30pm

Homework page: http://www.stat.ohio-state.edu/~huj1/530/homework.html

Recommended textbook:
The Statistical Sleuth
by Ramsey and Schafer

Course Contents

Review of 2-sample t-test:

1. Null & alternative hypotheses formulation.
2. p-value vs. confidence set

Review of Chapters 7-8: Simple Linear Regression:

1. Drug stability example - single batch
2. Which is X, which is Y?
3. Inference on mean or individual observations?
4. Regression or calibration?

Chapters 9-12: Multiple Regression:

1. Drug stability example - multiple batches
2. The General Linear Model (GLM)
3. Least squares estimates
4. Inference on regression coefficients - comparing slopes
5. Inference on the expected response
6. Prediction
7. Model selection - pooling data

Review of Chapters 5-6: One-way Analysis of Variance (ANOVA):

1. Color of insect traps example
2. Anti-psychotic drug example
3. Multiple comparisons - Tukey's method
4. Multiple comparisons - Dunnett's method
5. F-test then multiple comparisons?

Chapters 13-14: Multi-way Analysis of Variance (ANOVA)

http://www.stat.ohio-state.edu/~huj1/530/ylabas.html

3/29/2006
1. Blood pressure in dogs example
2. Best Linear Unbiased Estimates (BLUE)
   a. Orthogonality
   b. Variance-balanced designs
3. Multiple comparisons
4. Model selection

Chapter 16 Repeated Measures

1. Bioequivalence example
2. The 2-period crossover design
3. Mixed models

Grading:
- Homework: 30%
- Midterm (tentatively Monday 5/8/06): 35%
- Final (Wednesday 6/7/06, 9-20-11:15): 35%

http://www.stat.osu.edu/~hau/536/syllabus.html

3/29/2006
Statistics 651: Survey Sampling Methods
Summer 2008

Instructor: Dr. Scott Linder, 204A Cockins Hall, 292-5253, rsl@stat.osu.edu
Office Hours: Monday and Wednesday, 3:30 – 5pm

Course Assistant: Bin Li, 305A Cockins Hall, 292-6038, bli@stat.osu.edu
Office Hours: Thursday, 10:30 – 11:30am


Prerequisites:
A good background in Statistics 520 and 521, or at least 10 hours of mathematical statistics and
permission from the instructor. You should have a good working understanding of the notions of
expectation and variance, common discrete probability distributions, probability and estimation.

Computing:
Because this is an applied course, you’ll need to do some computing. Much of the homework will
involve using the program SURVEY to illustrate the ideas we develop in class. If you don’t
already have one, you will receive an account on the Statistics Department Unix machine, which
you’ll need to use in order to run SURVEY.

Homework:
There will be five or more assignments given during the quarter. Solutions will be handed out
when assignments are collected, so no late assignments will be accepted. All computer output
submitted must be edited and annotated so that the grader can easily follow your work. It’s
important that you write answers to problems in the context of the problem, using correct units.
Your lowest homework score will be dropped.

Midterm Exam:
Tentatively scheduled for Wednesday, July 19. You may bring to the exam for use a single sheet
(8.5" x 11"; front and back) of handwritten notes.

Final Exam:
Scheduled for Tuesday, August 22, 11:30am-1:18pm. You may use two sheets of handwritten
notes for this exam.

Grades:
Your course average will be determined according to the following weights:
Homework: 30%
Midterm Exam: 35%
Final Exam: 35%

Topics Covered:
Introduction and history of sampling; Questionnaire design and question writing; Simple random
sampling; Ratio estimation; Regression estimation; Stratified sampling; One-stage and two-stage
cluster sampling; Sampling with unequal probabilities; Design effects; Nonsampling errors;
Strategies for dealing with nonresponse; Estimation of population size; Related topics.
STATISTICS 661  APPLIED NONPARAMETRIC STATISTICS  SUMMER 2006

INSTRUCTOR: Professor Doug Critchlow  e-mail: dec@stat.osu.edu

OFFICE: Cockins Hall Room 440C  Office Phone: 292-3888

OFFICE HOURS: Mondays and Thursdays, 3:40 - 4:40 p.m., or by appointment.


COURSE OUTLINE (and Corresponding Textbook Sections):

<table>
<thead>
<tr>
<th>Number of 80-minute Lectures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Review of Basic Concepts from Classical (Parametric) Statistics, and Comparison with the Nonparametric Approach (1.1 - 1.8 and supplemental material)</td>
</tr>
<tr>
<td>The Dichotomous Data Problem (2.1 - 2.3)</td>
</tr>
<tr>
<td>Sign Test Procedures for the One-Sample Location Problem and for Paired Replicates Data; Asymptotic Relative Efficiency (3.4, 3.5, 3.6, 3.8, 3.11)</td>
</tr>
<tr>
<td>Signed Rank Procedures for the One-Sample Location Problem and for Paired Replicates Data (3.1, 3.2, 3.3, 3.7, 3.11)</td>
</tr>
<tr>
<td>The Two-Sample Location Problem (4.1, 4.2, 4.3, 4.5)</td>
</tr>
<tr>
<td>Kolmogorov-Smirnov Two-Sample Test for General Differences (5.4)</td>
</tr>
<tr>
<td>The One-Way Layout; Multiple Comparisons Procedures (6.1, 6.2, 6.5, 6.7)</td>
</tr>
<tr>
<td>Kendall's Tau Procedures for the Independence Problem (8.1, 8.2)</td>
</tr>
<tr>
<td>The Two-Way Layout (7.1, 7.2, 7.3, 7.4)</td>
</tr>
<tr>
<td>Additional Topics such as Simultaneous Confidence Intervals for the One-Way Layout, or Spearman's Rho (6.9 or 8.5 or other sections)</td>
</tr>
<tr>
<td>26</td>
</tr>
</tbody>
</table>

Note: Occasionally some supplemental material, from outside the textbook, will be covered in lecture. You are responsible for all the material presented in lecture.

GRADING SCHEME (Tentative):

Homework Assignments (Weekly)  20%
Two Midterm Examinations (22.5% each)  45%
Final Examination (Two Hours in Length)  35%

In addition, several optional "bonus homework problems" will be given in lecture, that elaborate on some of the more difficult (and hopefully intriguing) aspects of the course material.
The final exam is on Thursday, August 24 from 11:30 AM - 1:18 PM in the usual lecture classroom. No "early" final exams will be given, so make your travel plans accordingly.

**Attendance Policy:** In accordance with University Rules, a student who is absent from three or more (not necessarily consecutive) classes, without contacting the instructor with a valid excuse, may be reported for possible disenrollment. To prevent disenrollment, the instructor should be contacted (e-mail: dec@stat ohio-state.edu) within 24 hours of the third (and any subsequent) absence.
STATISTICS 664 AUTUMN 2005

Instructor: Steve MacEachern
E-mail: smac@stat.ohio-state.edu
Web site: www.stat.ohio-state.edu/~smac/664
Office: 205C Cockins Hall
Office Hours: Monday, 10:00 - 11:15; Wednesday 2:30 - 3:15
Phone: 292-5843

Lectures: MWF 9:00 - 10:15 a.m. IL6713
Text: Introduction to Statistical Quality Control, fifth edition, by Douglas C. Montgomery (Wiley)

Grader: Yi Liu
E-mail: yliu@stat.ohio-state.edu
Office: Lord Hall, room 20
Office Hours: Tuesday, 11:00 - 12:00
Phone: 292-1333

Course Description: Statistics 664 is a course on statistical quality control. During the course, we will cover
the basics of quality control, learning some of the language that is used in the area, reviewing the basic statistical
background that is needed to understand and implement quality control methods, and learning some new graphical
techniques. We will cover control charts carefully, will discuss process capability studies and acceptance sampling.
As time permits, we will cover selected additional material. The course will cover material from chapters 1 through
9, 14 and 15 of Montgomery's book plus bits and pieces of additional material.

Grading: Course grades will be assigned on the basis of performance on homework, one midterm exam, the final
exam, and the course term paper:

Homework: 20%
Midterm: 30%
Final: 40%
Term Paper: 10%

The exams will be open book, closed notes. The midterm exam will be given in class. The date of the exam will
be announced in class. The date and time of the final exam is as scheduled in the main registration guide. It will
be on Tuesday, December 6, from 7:30 to 9:15 am.

The term paper is expected to be based on a relatively recent article taken from the quality control literature.
Some journals in which good papers can be found are: Technometrics, the Journal of Quality Technology, Quality
Progress, the ASQ Annual Meeting Proceedings, and some of the IEEE Transactions. These journals are available
in the Science and Engineering Library (that's the one that has the math journals and books in it).

Homework assignments: Homework will be collected approximately weekly, making for about seven homework
assignments during the quarter. Solutions will be made available in the solution section of the Science and
Engineering library and/or online. Your lowest homework score will be dropped before computing your homework
grade.

Computer work: Many of the analyses for the course will be done on the computer with the MINITAB package.
Other software packages also have quality control modules, and you are free to make use of these packages. But,
the exams will contain computer output from the MINITAB package, so you should become familiar with MINITAB.

Course web page: There will be a course web page where you will find copies of this homework assignments and
occasional other postings.
Statistics 665: Discrete Data Analysis  
Summer 2006

Instructor: Dr. Scott Linder, 204A Cockins Hall, 292-5253. rsl@stat.ohio-state.edu  
Office Hours: Monday and Wednesday 3:30-5:00pm and by appointment.

Course Assistant: Li Yu, 428 Cockins Hall, 688-3979, liyu@stat.ohio-state.edu  
Office Hours: Tuesday 1:30-2:30pm

Text:  
Agresti (1996), *An Introduction to Categorical Data Analysis*.  
We'll cover material from Chapters 1 – 7 and 9.

Other References (On reserve at the Science Library):  
Bishop, Fienberg, and Holland (1975), *Discrete Multivariate Analysis*.  
Christensen (1990), *Log-Linear Models*.  
Fienberg (1980), *The Analysis of Cross-Classified Categorical Data*.  

Prerequisites:  
A good background in material covered in Statistics 529 and 645, knowledge of regression,  
analysis of variance, basic matrix algebra and some basic calculus.

Computing:  
Computing is required for this applied course. Much of your homework will need to be done using  
the computer. If you do not already have one, you will receive a Statistics Department Unix  
account. Most class examples will be run using the software package S+. You may use any  
machine and any statistical software package capable of appropriate analyses. At the back of  
your textbook, for example, several examples of SPSS and SAS programs are provided.

Homework:  
There will be five or more assignments given during the quarter. Assignments are due at the start  
of the class period of a due date. Solutions to assignments will be provided at the time of  
collection, so no late assignments will be accepted. All computer output submitted must be  
edited and annotated so that the grader can easily follow your work. It's important that you write  
answers in the context of the problem. Your lowest homework score will be dropped.

Midterm Exam:  
Tentatively scheduled for Wednesday, July 19. You may bring to the exam for use a single sheet  
(8.5" x 11", front and back) containing handwritten notes.

Final Exam:  
Scheduled for Thursday, August 24, 3:30-5:18pm. You may use two sheets of handwritten notes  
for this exam.

Course Grade:  
Your course average will be determined using the following weights:  
Homework Average: 30%  
Midterm Exam: 30%  
Final Exam: 40%
Stat 673 (Autumn 2005)
Introduction to Statistical Computing

Lecturer
Peter F. Craigmile, Ph.D.
peter.stat.ohio-state.edu
Office hours in 236 Cockins Hall: Mon 2:30pm-3:30pm, Tues & Thurs 2pm-3pm, or by appointment.

Grader
Lyue Yuen
lyuen.stat.ohio-state.edu
Office hours: By appointment only.

Lectures
This class is separated into two lab sections (notification of your lab section will be given in class).
Both lab sections meet Mon, 8:00 - 9:20am in 312 Cockins Hall.
Lab section A meets Tues, 12:30 - 1:45pm in SA 265.
Lab section B meets Thurs, 12:30 - 1:45pm in SA 265.
There will be no class on Thurs 24 Nov.
Lecture notes can be downloaded from the class website at http://www.stat.ohio-state.edu/~pfc/teaching/673.

Aims
This course introduces students to connectivity as well as the statistical packages that are available in the Department of Statistics. With each package, students should be able to manipulate data, use the online help, present graphical and numerical summaries, carry out some statistical analyses, and do simple Monte Carlo experiments. Students should also be able to present and discuss the results obtained from each computer package. The course uses packages on both Microsoft Windows and UNIX platforms.

Required texts
The Basics of S-Plus (3rd edition) (2002),
by Andreas Kruse and Melvin Olson, Statistics and Computing, Springer.
I will highlight other useful references as the course progresses.

Adds
All ADDS or SECTION CHANGES are done through BRUTUS the first week of the quarter (ends 23 Sep). You may attend the class you hope to enroll in the first week, but you may not take a seat from an enrolled student. ADDS or SECTION CHANGES for scheduling conflicts (graduating seniors, work conflicts) will be given priority. Documentation will be required (in the form of a letter on letterhead, from an advisor/employer), which explains, in detail, the circumstances and what action is being requested. Please go to 406C Cockins Hall for assistance in resolving the conflict. Starting at 7:30 a.m. Thurs 27 Sep, in 406C Cockins Hall adds will be processed on a first come first serve basis if there are any openings. The instructor will not under any circumstances sign paperwork regarding course admission.
Evaluation

Homework: 40%
Take home midterm exam: 25%
Take home final exam: 25%
Class participation (includes the presentation of results and papers in class): 10%

Homework

Homework will complement the work in class. No late homework will be accepted. You are encouraged to work together on the homework, but do not copy any part of a homework. Each student must produce his/her own homework to be handed in. As part of the requirements for this class, homework must be word processed. Feel free to ask me for help after you have made an attempt at the questions.

Midterm and Final exam

The take-home midterm and final exams will be an application of the methods taught in class. Further details will be given in class.

Important Dates

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mon 3 Oct</td>
<td>Homework 1 due at start of class</td>
</tr>
<tr>
<td>Mon 10 Oct</td>
<td>Homework 2 due at start of class</td>
</tr>
<tr>
<td>Mon 17 Oct</td>
<td>Homework 3 due at start of class</td>
</tr>
<tr>
<td>Mon 24 Oct</td>
<td>Homework 4 due at start of class</td>
</tr>
<tr>
<td>Mon 31 Oct</td>
<td>Homework 5 due at start of class</td>
</tr>
<tr>
<td>Mon 31 Oct</td>
<td>Midterm exam handed out</td>
</tr>
<tr>
<td>Mon 7 Nov</td>
<td>Midterm exam due at start of class</td>
</tr>
<tr>
<td>Mon 14 Nov</td>
<td>Homework 6 due at start of class</td>
</tr>
<tr>
<td>Mon 21 Nov</td>
<td>Homework 7 due at start of class</td>
</tr>
<tr>
<td>Thru 24 Nov</td>
<td>No class</td>
</tr>
<tr>
<td>Mon 28 Nov</td>
<td>Final exam handed out</td>
</tr>
<tr>
<td>Mon 5 Dec</td>
<td>Final exam due at noon</td>
</tr>
</tbody>
</table>

Special accommodations

Any student who feels they may need an accommodation based on the impact of a disability should contact the instructor privately to discuss your specific needs. You should also contact the Office of Disability Services at (292-3567) in 150 Pomona Hall to coordinate reasonable accommodations for students with documented disabilities.

Academic misconduct

Cheating, plagiarism and other forms of academic dishonesty will not be tolerated. Any violation will be prosecuted to the fullest extent as set out in University Rule 3335.01-02.

Disclaimer

This syllabus should be taken as a fairly reliable guide for the course content. However, you cannot claim any rights from it and in particular I reserve the right to change due dates or the methods of assessment. Official announcements will ALWAYS be those made in class.