Note: This syllabus is incomplete. Some content is yet to be determined.

ST 305 Course Syllabus

ST 305 – Introduction to Statistics

Section 001
SPRING 2014
4 Credit Hours

Special Notes

"We shall not cease from exploration and the end of all of our exploring will be to arrive where we started and to know the place for the first time." -T.S. Eliot

There are two purchase options for your required Textbook:

1. **Recommended purchase option**
   Purchase an ebook version of the text by making an online credit card purchase. The cost is approximately $85 for one year of access. Go to our course content website; in the upper right portion of the screen under Register click on Student and follow the directions; use the course id **reiland37796**. If you need assistance go back to our course content website sign-in screen and in the lower left portion under Students click on Get Started.

   In addition to a high-quality ebook version of the text, our course content website includes a wide variety of interactive multimedia learning resources (Quicktime movies of worked examples, powerpoint slides for each chapter, video clips, interactive activities, and more) to assist students.

2. **Alternative purchase option**

   New and used copies of the text are available at the NCSU Bookstore. New copies of the text with the above ISBN include at no extra charge the MyStatLab Access Card that, with the course id **reiland37796**, gives the student access to our course content website. MyStatLab Access Cards in used copies of the text are not usable since the access code can be used only once.

Course Description


Learning Outcomes

*Course Description*: ST 305-001 is NOT a math course. The central theme of the course is to help you learn to understand the world from data. Specifically, the course will enable you to
i) prepare you for more advanced statistics courses;
ii) acquire the necessary data-gathering, data-analysis, and interpretation/communication expertise to meet the challenges of a more demanding cognitive global environment.
iii) incorporate statistical thinking into your everyday lives.

“Beyond the formula” skills are emphasized. This course will require you to: think critically, be skeptical, think about variation (rather than just about the center), move beyond a “memorize the answer” approach, and think about conditional probabilities and rare events when making inferences from data.

Some mathematical skill is required to work with elementary statistics (basic high school algebra is the mathematical prerequisite), but mathematical manipulations will be replaced by relying on technology for the calculations and graphics; this will allow more emphasis to be placed on the “beyond the formula” skills mentioned above.

**This course requires more intellectual effort than the low mathematical level suggests!** It is related to every other course you may study. The course is elementary in mathematical level but conceptually rich in statistical ideas and serious in its aim to improve your data-analytic skills and your ability to apply statistical methods with understanding.

**Software: Excel, Statcrunch, SAS, etc.**

Statistics is not a spectator sport! In this course you will be doing statistics with real data rather than listening to someone talk about doing statistics. The main tools that will facilitate your involvement include, but are not limited to, one or more of the following: Excel, SAS, your graphing calculator, if you have one (you do not need to purchase a graphing calculator for this course), and statcrunch. Statcrunch, available at our course content website and [http://statcrunch.stat.ncsu.edu/](http://statcrunch.stat.ncsu.edu/), is an award-winning spreadsheet-type statistics program that is superior to Excel for doing statistics. You will use these tools in many of the homework problems to analyze interesting real-world data sets included with the problem.

For each exam you are allowed one 3 × 5 formula/definition card (you can write on both sides); on this card write any formulas or definitions you think you will need for the exam. You are also allowed to use a hand-held calculator. The exams are closed book. The exams are scheduled for the following days:

- first midterm exam: **Thursday Feb. 6**
- second midterm exam: **Thursday March 6**
- third midterm exam: **Monday April 4**
- final exam: **Monday May 5, 8-11 AM**

**Webassign homework:** The webassign homework assignments will be posted with due dates at webassign, [https://www.webassign.net/ncsu/login.html](https://www.webassign.net/ncsu/login.html). Obtaining answers on webassign homework questions from other individuals or giving answers on a question to another student in the class are not allowed. However, student-to-student cooperation and communication is encouraged. For each assignment a forum will be set up on webassign where students can exchange comments and questions about the homework problems.

There will be 14 30-point assignments to complete during the semester. **No homework grades will be dropped when determining the course grade.** You will be allowed multiple attempts to correctly answer questions that are not true/false- or yes/no-type questions. Webassign provides you with immediate feedback when you submit an answer to a question. After the due date of an assignment an answer key
for the assignment will be available in webassign. You will not be allowed to submit answers for an assignment after its due date. **After logging on to webassign, the homework assignments can be accessed by clicking on the “My Classes” drop-down menu on the upper left side of the page and choosing ST 305 section 001 Spring 2014.**

Webassign homework will be open book and “open computer”. This is not a "cookbook" course where you must memorize mysterious formulas since this is not how you will apply the material to other courses or your profession. You are allowed to use any software (SAS, Excel, statcrunch, etc.), calculator, and statistical table when answering a webassign homework question. You do not have to complete an assignment in a single sitting; you are allowed to logout and complete the assignment at a later time prior to the due date.

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**Course Structure**

**Lecture worksheets**
During many lectures a lecture worksheet will be distributed. The worksheet will require individual or group participation in a basic activity related to recent lecture material and will be collected at the conclusion of the lecture period. The worksheet will not be graded for accuracy and correctness but you will be credited with 5 points for each worksheet that is handed in. Approximately 32 worksheets will be distributed during the semester; the best 25 will be used in determining your grade.

**How Your Grade is Determined:**

Your grade in the course is assigned according to the table given in your syllabus. The percentage score, rounded to 2 decimal places, is determined by summing your exam score (400 total points possible), your webassign homework score (420 total points possible) and lecture worksheet score (125 total points possible) and dividing this sum by 945.

**Exams:** There are 3 midterm exams and a final exam. No exemptions from the final exam will be granted; the final exam will be given only during final exam week at the place and time scheduled by the registrar. For every exam each student is allowed one 3" x 5" card containing formulae, definitions, and any other information the student thinks will be helpful for the exam. Calculators are required for exams.

The following textbook chapters are covered on the exams:

- **first midterm exam:** chapters 1-10, 12; the topics in these chapters are covered in webassign homework assignments 1-4.
- **second midterm exam:** chapters 14-18; the topics in these chapters are covered in webassign homework assignments 5-8.
- **third midterm exam:** chapters 19-23; the topics in these chapters are covered in webassign homework assignments 9-11.
- **Final exam:** chapters 24-25, 27, 28; the topics in these chapters are covered in webassign homework assignments 12-14.

For each exam you are allowed one 3 × 5 formula/definition card (you can write on both sides); on this card write any formulas or definitions you think you will need for the exam. You are also allowed to use a hand-held calculator. The exams are closed book. The exams are scheduled for the following days:

- **first midterm exam:** **Thursday Feb. 6**
second midterm exam: **Thursday March 6**
third midterm exam: **Monday April 4**
final exam: **Monday May 5, 8-11 AM**

**Instructors**

**Dr. Thomas W Reiland** (reiland) - Instructor  
Email: reiland@stat.ncsu.edu  
Web Page: http://www4.stat.ncsu.edu/~reiland/  
Phone: 919-515-1939  
Fax: 919-515-7591  
Office Location: 5278 Sas Hall  
Office Hours: M, W: 2:15-3:15 and by appointment

**TBD** (TBD) - Teaching Assistant  
Email: TBD  
Web Page: NA  
Phone: TBD  
Fax: NA  
Office Location: 1101 SAS Hall  
Office Hours: office hours TBA

**Course Meetings**

None.

**Course Materials**

**Textbooks**

**Stats, Data and Models** - by Richard DeVeaux, Paul Velleman and Richard Bock  
Web Link: NA  
Cost: Varies  
*This textbook is required.*

**Expenses**

None.

**Materials**

None.

**Requisites and Restrictions**

**Prerequisites**

Prerequisite: MA 141 and either COS 100 or E 115

**Co-requisites**

None.

**Restrictions**

None.

**General Education Program (GEP) Information**
GEP Category
This course does not fulfill a General Education Program category.

GEP Co-requisites
This course does not fulfill a General Education Program co-requisite.

Transportation
This course will not require students to provide their own transportation. Non-scheduled class time for field trips or out-of-class activities is NOT required for this class.

Safety & Risk Assumptions
None.

Grading

Grade Components

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exams</td>
<td>400 pts</td>
<td>3 midterms @ 100pts. each, final @ 100 pts.</td>
</tr>
<tr>
<td>Webassign homework</td>
<td>420 pts</td>
<td>14 assignments @ 30pts. each</td>
</tr>
<tr>
<td>Lecture Workshets</td>
<td>125 pts</td>
<td></td>
</tr>
</tbody>
</table>

Letter Grades

This Course uses the Following (Non-Standard) Letter Grading Scale:

- 98 ≤ A+ ≤ 100
- 92.50 ≤ A < 97.99
- 90.00 ≤ A- < 92.49
- 87.50 ≤ B+ < 89.99
- 82.50 ≤ B < 87.49
- 80.00 ≤ B- < 82.49
- 77.50 ≤ C+ < 79.99
- 72.50 ≤ C < 77.49
- 70.00 ≤ C- < 72.49
- 67.50 ≤ D+ < 69.99
- 62.50 ≤ D < 67.49
- 60.00 ≤ D- < 62.49
- 0 ≤ F < 60

Requirements for Credit-Only (S/U) Grading
In order to receive a grade of S, students are required to take all exams and quizzes, complete all assignments, and earn a grade of C- or better. Conversion from letter grading to credit only (S/U) grading is subject to university deadlines. Refer to the Registration and
Records calendar for deadlines related to grading. For more details refer to http://policies.ncsu.edu/regulation/reg-02-20-15.

**Requirements for Auditors (AU)**

Information about and requirements for auditing a course can be found at http://policies.ncsu.edu/regulation/reg-02-20-04.

**Policies on Incomplete Grades**

If an extended deadline is not authorized by the instructor or department, an unfinished incomplete grade will automatically change to an F after either (a) the end of the next regular semester in which the student is enrolled (not including summer sessions), or (b) the end of 12 months if the student is not enrolled, whichever is shorter. Incompletes that change to F will count as an attempted course on transcripts. The burden of fulfilling an incomplete grade is the responsibility of the student. The university policy on incomplete grades is located at http://policies.ncsu.edu/regulation/reg-02-50-3.

**Late Assignments**

You will not be allowed to submit answers for an assignment after its due date.

**Attendance Policy**

For complete attendance and excused absence policies, please see http://policies.ncsu.edu/regulation/reg-02-20-03

**Attendance Policy**

None.

**Absences Policy**

None.

**Makeup Work Policy**

None.

**Additional Excuses Policy**

None.

**Academic Integrity**

Academic Integrity

Students are required to comply with the university policy on academic integrity found in the Code of Student Conduct found at http://policies.ncsu.edu/policy/pol-11-35-01

**Academic Integrity Policy:** Any form of academic misconduct is a violation of the Student Code of Conduct and will not be tolerated. Academic misconduct may be defined as "any activity which tends to compromise the academic integrity of the institution, or subvert the educational process". I expect complete honesty in the completion of webassign homework and tracked tutorial exercises. The student's electronic submission of assigned work means that the student neither gave nor received unauthorized aid. Cheating on an exam or webassign homework at the least will result in an F in the course. Students are encouraged to discuss webassign homework and tracked tutorial exercises with each other; however, submission of the answers must be done independently. Violations of this rule will not be tolerated and will be considered cheating. Further details on academic integrity are in NC State University's Code
of Student Conduct at http://www.ncsu.edu/student_conduct. Also note the existence of the University policy on academic integrity found in the Code of Student conduct at http://policies.ncsu.edu/policy/pol-11-35-01.

### Academic Honesty

See http://policies.ncsu.edu/policy/pol-11-35-01 for a detailed explanation of academic honesty.

None.

### Honor Pledge

Your signature on any test or assignment indicates "I have neither given nor received unauthorized aid on this test or assignment."

### Electronically-Hosted Course Components

Students may be required to disclose personally identifiable information to other students in the course, via electronic tools like email or web-postings, where relevant to the course. Examples include online discussions of class topics, and posting of student coursework. All students are expected to respect the privacy of each other by not sharing or using such information outside the course.

### Accommodations for Disabilities

Reasonable accommodations will be made for students with verifiable disabilities. In order to take advantage of available accommodations, student must register with the Disability Services Office (http://www.ncsu.edu/dso), 919-515-7653. For more information on NC State's policy on working with students with disabilities, please see the Academic Accommodations for Students with Disabilities Regulation at http://policies.ncsu.edu/regulation/reg-02-20-01.

### Non-Discrimination Policy

NC State University provides equality of opportunity in education and employment for all students and employees. Accordingly, NC State affirms its commitment to maintain a work environment for all employees and an academic environment for all students that is free from all forms of discrimination. Discrimination based on race, color, religion, creed, sex, national origin, age, disability, veteran status, or sexual orientation is a violation of state and federal law and/or NC State University policy and will not be tolerated. Harassment of any person (either in the form of quid pro quo or creation of a hostile environment) based on race, color, religion, creed, sex, national origin, age, disability, veteran status, or sexual orientation also is a violation of state and federal law and/or NC State University policy and will not be tolerated. Retaliation against any person who complains about discrimination is also prohibited. NC State's policies and regulations covering discrimination, harassment, and retaliation may be accessed at http://policies.ncsu.edu/policy/pol-04-25-05 or http://www.ncsu.edu/equal_op/. Any person who feels that he or she has been the subject of prohibited discrimination, harassment, or retaliation should contact the Office for Equal Opportunity (OEO) at 919-515-3148.

### Course Schedule

**NOTE:** The course schedule is subject to change.

TBD