ST 790 Course Syllabus

ST 790 Section 001 – Multivariate Statistics (3 credits)

Course Description

This course will cover both classical and modern techniques for analyzing multivariate data. We will develop a thorough understanding of multivariate normal distribution and learn techniques for analyzing multivariate data such as classification, clustering, factor analysis, multivariate analysis of variance, principal component analysis, sufficient dimension reduction.

Course Structure

Graded Coursework:

- Homework: 30% of total grade
- Midterm exam: 30% of total grade
- Final Exam: 40% of total grade

There will be roughly bi-weekly homework assignments. The lowest homework score will be dropped. As we are dropping a low score, late assignments are not accepted.

Make up exams will not be given under any circumstances. If verifiable documentation can be provided to excuse a missed exam, then the other exam components of the grade will be reweighted.

Course Policies

Courtesy and Respect in the classroom is expected.

Please come on time and do not start packing up before class is over.

I will use e-mail for some course announcements, so check regularly.

Laptop computers may not be used in class. Tablets or tablet computers may be used to take notes, as long as they are only used for notes and do not distract other students. If you are seen using the tablet for something other than notes, you will not be allowed to use the tablet for the rest of the semester.

I reserve the right to change any policy given, or add new policies as needed.

Instructors

Dr Yichao Wu (ywu11) - Instructor
Email: wu@stat.ncsu.edu
Web Page: http://www4.stat.ncsu.edu/~wu/
Phone: 919-513-7677
Fax: 919-515-7591
Office Location: SAS Hall 4274
Office Hours: T 2:00-3:00PM, Th 11:00-noon, or by appointment

Mr Wei Li – Teaching Assistant
Email: wei_li@ncsu.edu
Office Hours: M 9:00-10:30AM and W 12:30-2:00PM in 1101 SAS Hall
Course Meetings

Lecture

Days: TH
Time: 3:00pm - 4:15pm
Campus: Main
Location: SAS 1108

Course Materials

Textbooks

Edition: 1st
ISBN: 978-0124712522
Cost: $139.99
This textbook is optional.

Edition: 6th
ISBN: 978-8120345874
Cost: $183.05
This textbook is optional.

The Elements of Statistical Learning: Data Mining, Inference, and Prediction – Trevor Hastie, Robert Tibshirani, and Jerome Friedman, 2009, Springer
Edition: 2nd
ISBN: 978-0387848570
Cost: $70.09
This textbook is optional.

Requisites

Prerequisites

ST521, ST522, and ST552

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.

Grading

Grade Components

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
<th>Details</th>
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<tbody>
<tr>
<td>Homework</td>
<td>30%</td>
<td>Roughly bi-weekly</td>
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</table>
Midterm Exam | 30% | Thursday Oct 13, 2016, 3pm-4:15pm
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Final Exam | 40% | Thursday Dec 8, 2016, 1pm-4pm

**Letter Grades**

This Course uses Standard NCSU Letter Grading:

- $97 \leq A^+ \leq 100$
- $93 \leq A \leq 97$
- $90 \leq A^- \leq 93$
- $87 \leq B^+ \leq 90$
- $83 \leq B \leq 87$
- $80 \leq B^- \leq 83$
- $77 \leq C^+ \leq 80$
- $73 \leq C \leq 77$
- $70 \leq C^- \leq 73$
- $67 \leq D^+ \leq 70$
- $63 \leq D \leq 67$
- $60 \leq D^- \leq 63$
- $0 \leq F \leq 60$

**Requirements for Credit-Only (S/U) Grading**

Performance in research, seminar and independent study types of courses (6xx and 8xx) is evaluated as either "S" (Satisfactory) or "U" (Unsatisfactory), and these grades are not used in computing the grade point average. For credit only courses (S/U) the requirements necessary to obtain the grade of "S" must be clearly outlined.

**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](http://policies.ncsu.edu/regulation/reg-02-20-04).

**Policies on Incomplete Grades**

If an extended deadline is not authorized by the Graduate School, 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) by 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-02-50-03](http://policies.ncsu.edu/regulation/reg-02-50-03). Additional information relative to incomplete grades for graduate students can be found in the Graduate Administrative Handbook in Section 3.18.F at [http://www.fis.ncsu.edu/grad_publicns/handbook/](http://www.fis.ncsu.edu/grad_publicns/handbook/).

**Attendance Policy**

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

**Attendance Policy**
While not mandatory, regular attendance and oral participation are encouraged. (No absences policy, no additional excuses policy)

**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](http://policies.ncsu.edu/policy/pol-11-35-01)

**Academic Honesty**

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

**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**

There are no electronically-hosted components for this 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](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](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](http://policies.ncsu.edu/policy/pol-04-25-05) or [http://www.ncsu.edu/equal_op/](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.