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Stat 512: Applied Regression Analysis – Spring 2017

Divisions 4 and 5: Tue-Thur (REC 113)

Instructor: Dr. Heejung Shim

Office Hours: Wed 1-2pm and Thur noon-1pm in MATH 210

Appointments: If you cannot come to the scheduled office hours, you may arrange an appointment for another time. Please be courteous and *make an appointment instead of just "dropping by"*. You can arrange an appointment by email: hjshim@purdue.edu.

Note: If you email me, include STAT512 in the subject. E.g. "STAT512:XXX"

TA: Peiyi Zhang (email: zhan2763@purdue.edu), Office Hours: TBA

Textbook:

1. *Special reprint of Applied Linear Statistical Models*, *5th ed.,* by Kutner, Neter, Nachtsheim & Li, 2012. (**Required**). ISBN: 9781121819573, 9781121770515 or 9781121682511. Information on how to order the ebook is available on the course website (see below).

Course Website: https://github.com/heejungshim/STAT512 This site will be used to provide you with information relevant to the course. Such information includes tentative schedule, announcements to all divisions, homework assignments, data sets, dates of exams, and review sheets. Please check this site regularly for updates.

Blackboard Learn: A Learn site has been created for this course. Students enrolled in this course will automatically be given access to this site ("auto-populated"). The site is limited to enrolled students and thus will be used to provide restricted information such as grades, lecture notes.

Piazza: https://piazza.com/purdue/spring2017/stat512/home. Make sure you're registered for the class piazza webpages. This term we will be using Piazza for class discussion. The system is highly catered to getting you help fast and efficiently from classmates, the TA, and myself. Rather than emailing questions to the teaching staff, I encourage you to post your questions on Piazza.

Final Grade: Your final grade will depend on the following components with these proportions:

Homework	20% (Roughly 7 assignments)
Midterm	25%
Final Project	25% (Due Friday, April 28, 2017)
Final Exam	30%

The percentage grades needed to achieve an A, B, C, or D will follow approximately the following scale: [90–100] for A, [80–89.99) for B, [70–79.99) for C, [60–69.99) for D, [0–59.99) for F. The minimum score needed for a given letter grade could be lowered if

necessary but will not be raised. (I expect – but won't guarantee – that the median final grade in this class will be an "B".)

We do not offer pluses or minuses in this class nor do we curve the final score.

Unless there is a calculation error, final grades will not be changed. With that being said, "This is my last semester", "I won't graduate if I get so and so grade", "I will lose my scholarship", "I am on probation", or "I need a certain grade to maintain my financial assistance" ARE NOT LEGITMATE REASONS TO BUMP FINAL GRADES UP.

Attendance: Attendance is optional but you are responsible for any announcements and the material covered during that lecture.

Examinations: There will be one midterm examination and a final exam. Both the midterm and final exam will have **mathematical and conceptual (written) components**.

Exam Rules:
There will be **NO MAKE-UP MIDTERM or FINAL EXAM** unless there is an **emergency** in which case you are required to provide a proper documentation, please plan ahead of time. The following situations are the only legitimate reasons to take the make-up exam: sickness (official letter from doctor), death in the family, military service call, sports game (need letter from coach). If you have another reason, such as a job interview or plan to attend a conference, you must notify me at least two weeks prior to the exam in order to decide on the legitimacy of the reason and the possibility of rescheduling the exam (it will be always rescheduled earlier than the exam). Arranging cheap airfare home prior to the final is never a legitimate reason.

Cellphones, iPads, Laptops or any device capable of wireless communications are not allowed during exams. Practice exams or homework solutions are not permitted during exams.

Computer Project: There will be a final group assignment worth 25% of your final grade, it will be assigned early in the semester and will be due in the last week of classes. The project has two components written and oral with the following breakdown: final written report (8%), oral presentation including one question (9%), and peer review (8%). Further details will be forthcoming.

Mailing List: A mailing list will be arranged for this course. I will send email to this list with any special announcements or reminders.

Grader: All homework will be graded by TA, who will also help grade the exams.

SAS Computer Software: We will use SAS 9.4 to perform data analysis in this class. The intent of using software is to allow the computer to perform routine calculations and graphing, while we focus on choosing the appropriate analysis tools and interpreting the results. Computer software is NOT a substitute for understanding the statistical methods, and you will not have access to a computer during exams. SAS is available in the Purdue computing labs. You may also obtain a copy of SAS for your own PC for class purposes

free of charge by showing your student ID in STEW Building (Software Distribution) room G-31. The only way to learn how to use SAS is to try it! There are several sources of SAS help available. SAS help sessions are every Wednesday from 6:30-8:30 pm in BRNG B286. You can get a help from the software help office (http://www.stat.purdue.edu/scs/help/software_consulting_schedule.html). You can also get help from the instructor and TA. SAS manuals (besides the Recommended Text) are available in the bookstore.

Homework: Homework will be due every two weeks. The homework assignment will be posted on the website approximately one week before its due date. **LATE HOMEWORK WILL NOT BE ACCEPTED UNDER ANY CIRCUMSTANCES**. The only way to submit the homework assignment is via Blackboard Learn. After deadline, a link for submission won't be available. Before deadline, you are allowed to submit a revised version *just once*. A grader will grade the last version.

You should edit any SAS output you plan to hand in by pasting it into an editor such as MS-Word, and getting rid of extra space or unnecessary output. SAS output should be pasted into your solution as you are answering the questions. **Your SAS input file should be attached at the end of the homework**. The input is not given a grade *per se*, but it can be helpful to the grader in trying to figure out what you did wrong and in assigning partial credit.

Homework performs four vital functions in this course:

i. **It helps you learn SAS, but won't help you much prepare for the exams. The only way to prepare well for the exams is to read the lectures and do the practice problems. I'll solve practice problems during the lectures.**
ii. It gives you an opportunity to practice what you have learned and to understand concepts by actually using them;
iii. It gives you feedback on what you understand and on what areas need more work;
iv. It contributes to your final grade.

You are encouraged to use homework as a learning tool. You may also wish to discuss homework with your classmates. Group discussions and study sessions can be a useful tool for learning. However, outright copying is unacceptable, as well as pointless, and will be penalized. A good rule of thumb is that it is fine to talk together about how to do a problem, but then go do it and write it up yourself, possibly comparing answers afterwards. **Do not copy another person's SAS code**, but it is okay to ask someone to help you find your mistake. Remember that if you copy from a classmate without understanding it, only your classmate will pass the exam.

Some of these homework assignments are similar to problems from previous semesters and you may have obtained the solution from former students or online database. **If blatant copying is detected, all parties involved (copier and copied) will receive an (F) for the course**. My teaching assistant is very well trained at detecting plagiarized work. We take academic misconduct VERY seriously.

The first page of each homework set handed in **must** contain the following information:

i. your name

ii. the number of the homework set (e.g. Homework #2)
iii. Stat 512
iv. your division number (4 or 5)

This information is necessary to ensure that your grades are recorded.

Re-grades: Since the professor and grader are fallible human beings, occasionally errors will occur in grading. For this reason, students are able to request that such an error be corrected. Two types of error can occur. A *type I error* occurs if points are deducted for a correct solution. A *type II error* occurs if sufficient points are not deducted for an incorrect solution. Any request for a re-grade *must* be made *in writing* and *must* abide by the following procedure, or it will be ignored.

1) Attach a new piece of paper to the *front* of the work to be re-graded. This piece of paper should contain the following information
   a) the word "re-grade" displayed prominently
   b) your name and section
   c) which homework set or midterm is involved (e.g. Homework #6)
   d) the relevant problem number(s) (e.g. Problem 7.23)
   e) a detailed explanation of the suspected error ("Please look at problem 4" is <u>not</u> considered a detailed explanation).
   f) the date of resubmission
2) Print out the appropriate pages of the solutions from the web page or Blackboard, and circle the relevant piece of the solution. Attach this *behind* the work to be re-graded.
3) Give this packet to me, or put it in my mailbox (I don't check mailbox very often, so email me if you put it in my mailbox). A verbal explanation is neither necessary nor appropriate since a) I won't remember it, and b) the grader will do the re-grading anyway.

<u>No exceptions will be made to this policy</u>. The grader will be responsible for the re-grading and you will receive a written note from the grader explaining the outcome. I will review the grader's response before returning it to you, to make sure the problem was resolved. Re-grade requests may be submitted until the last week of classes, but you are encouraged to be prompt. If the above procedure is not followed, the re-grade request will be denied. Any rudeness accompanying a re-grade request will result in the assessment of a "technical foul" penalty equal to the total number of points for the disputed question. Please also note that a re-grade request is different from the questions "Can you help me figure out what I did wrong here?", or "I don't understand the posted solutions", which are entirely appropriate for office hours.

Grades on Blackboard: It is your responsibility to make sure the grades recorded on Blackboard are correct. You should also let me know if you think something was graded incorrectly. However, all of this should be done in a timely manner. (<u>You shouldn't wait until finals week to let me know that you need more points on Homework #1.</u>) **All grades in Blackboard** (other than the final exam) **should be finalized by the end of Dead Week**. Any mistakes or omissions in Blackboard need to be shown to me before then.

Academic Integrity: We take academic integrity very seriously in this course. The only true way to get an education is through hard work and striving to understand concepts on your own. The penalty for academic misconduct on any assignment, exam, or final project is failure for the course with referral to the Dean of Students for further sanctions. **Cheating on the assignments, midterm, final project, or final exam results in an "F" for the course**. *Note that we punish not only the person who cheats but also the person who enables the cheater.* **When it comes to academic misconduct we have zero tolerance**.

Official Language: While speaking another language(s) is an advantage, I expect you to communicate in *English* with your fellow classmates in class and in my office. English is the only spoken language in the classroom.

Emergency Preparedness: In the event of a major campus emergency, course requirements, deadlines and grading percentages are subject to changes that may be necessitated by a revised semester calendar or other circumstances beyond the instructor's control. Here are ways to get information about changes in this course.

- Course web page (https://github.com/heejungshim/STAT512)
- Instructor's email (hjshim@purdue.edu)

Emergency preparedness is a personal responsibility. Purdue University is continuously preparing for natural disasters or human-caused incidents with the ultimate goal of maintaining a safe and secure campus. Let's review the following procedures:

- To report an emergency, call 911.
- To obtain updates regarding an ongoing emergency, and to sign up for **Purdue Alert text** messages, view *www.purdue.edu/ea*
- There are nearly 300 *Emergency Telephones* outdoors across campus and in parking garages that connect directly to the Purdue Police Department (PUPD). If you feel threatened or need help, push the button and you will be connected immediately.
- If we hear a **fire alarm**, we will immediately suspend class, **evacuate the building**, and proceed outdoors, and away from the building. **Do not use the elevator**.
- If we are notified of a Shelter in Place requirement for a tornado warning, we will suspend class and shelter in the lowest level of this building away from windows and doors.
- If we are notified of a Shelter in Place requirement for a hazardous materials release, or a civil disturbance, including a shooting or other use of weapons, we will suspend class and shelter in our classroom, shutting any open doors or windows, locking or securing the door, and turning off the lights.