

Syllabus

STT 351-001, Fall 2007, meets MWF 10:20-11:10 C109 WH.

STT 351-002, Fall 2007, meets MWF 11:30-12:20 C313 WH.

This syllabus is subject to change if the instructor determines that is in the best interests of the course.

Professor Raoul LePage

Office Hours: M 1-2 A428 WH; W 9-10 A428 WH, and by appt.

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Course website: www.stt.msu.edu/~rdl click on STT351.

Grader: Zheng, Shuzhuan, A509 WH, zheng@stt.msu.edu
(for questions about homework scoring only)

Textbook: Applied Statistics for Engineers and Scientists 2nd Ed.
by Devore/Farnum, Brooks/Cole Division of Thompson 2005.

Coverage: This textbook has 555 pages (we'll omit some). The university calendar gives us 43 class periods. Leaving out two for exams we have 555/41 ~13.5 pages per period. Two exams divide the course into three segments of around 14 class meetings each, or around 189 pages for each of three course segments.

Exam 1 Friday, September 28 Chapters 1-4.

Exam 2 Friday, November 2 Chapters 5-8.

Final exam 50% comprehensive; 50% Chapters 9-11.

Exam format and policies: **Exam format:** multiple-choice, machine scored. You must hand in your written exam solutions together with your score sheet as a control. **Exam policies:** (1) answers given without substantiation are incorrect; (2) makeups are not given. Points may in some cases, with prior approval, be shifted to another exam or the exam may be taken at the time of the other section (001 or 002 only).

Final exams schedule:

STT 351-001 Thursday, December 13, 10-12, C109 WH.

STT 351-002 Friday, December 14, 10-12, C113 WH.

Other Important Dates:

8/27/07 First day of classes

9/3/07 Labor Day, University closed

8/31/07 Close of free add period for fall

9/20/07 End of 100% refund

10/16/07 Middle of Semester

11/22 & 23/07 Thanksgiving Holiday, University Closed

12/7/07 Last Day of Classes

Electronics: Electronics are not allowed on exams. All must be put away, all headphones, cell-phones, calculators and the like.

Calculators/Computers/Software: A scientific calculator will be essential for homework but will not be used on exams since calculations on exams will be kept artificially simple. You should take the opportunity to embrace Minitab or some other statistical software as you work through the many exercises of this course. I will give you exercises to work by hand and ask that you also submit their solutions from statistical software. Your textbook gives many examples of how to do this. You doubtless have used computer labs on campus. There is one in B100 WH.

Help Room: The Statistics Department maintains a help room in C100 WH. A schedule is posted to www.stt.msu.edu and also on the door of C100 WH.

Class notes, Microsoft Journal: In class I use a Tablet PC projecting to a screen. Everything I write will be posted to the course website in the form of **.jnt** files. Use Google to search for the free application with which to view **.jnt** files. Unfortunately, Mac and other non-Microsoft users may need a Microsoft environment to view these files.

Grading: Your course grade will be based on 30% Homework, 20% each for Exams 1 and 2, and 30% Final exam. I **may** provide additional relative weightings and grade you to your best performance on any of them. Students performing exceptionally well on homework or exams **may** find that they score better than 100%. I also **may** issue bonus assignments.

Seating: Seating will be assigned in the classroom and will be used for MWF meetings as well as exams.

Attendance: Each class missed after week one will incur a 0.5 grade penalty, to be deducted from one of exams 1 or 2.

Week 1: We cover **Chapter 1 except section 1.5**, giving us a strong start on the course. Your **first homework assignment** is due at the beginning of class **Wednesday, September 5**. Questions such as 1.8+, marked with a plus, are the ones I have made up for you. Here are your assigned exercises. Begin them at once and be prepared to ask questions in class as we cover very similar ones.

1.2 **Comparative stem-and-leaf display**

1.6 **Two differently configured stem-and-leaf displays**

1.8 **Histogram**

1.10 **Pareto diagram.**

1.20 **Uniform density.**

1.22 **Density for the sum of two independent uniform waiting times.**

1.24 **Exponential density.**

- 1.26 Legitimate density?
- 1.28 Normalization constant for a density.
- 1.30 Direct use of standard normal table (scores to percentages).
- 1.32 Inverse use of standard normal table (percentages to scores).
- 1.38 Non-standard normal percentages obtained by transforming TO standard normal (scores to percentages) then using table of standard normal.
- 1.40 Non-standard normal scores obtained by transforming FROM standard normal scores having desired percentages (percentages to scores).
- 1.52 Direct calculation of a binomial probability as on p. 50.
- 1.54 Use Table II of binomial to answer the questions then confirm your answers by direct calculation as you did in 1.52.
- 1.56 Use Table III to read off the Poisson probability.
Check your answer by direct calculation as on p. 50.
- 1.8+ Plot a kernel density estimate for the data of 1.8. Refer to pp. 333-334 for a description. Plot the kernel density estimate, from a university lab, using “little software” package found on the STT351 website www.stt.msu.edu/~rdl under STT351. Visually compare your plot with the histogram. Are they similar? Does the density resemble any of the types in Figure 1.10 page 18?
- 1.9+ Kernel density estimate. Reproduce the density of Figure 7.13 page 334. Does your plot faithfully resemble 7.13?