

STT 351-007: Probability and Statistics for Engineering (3 credits)

Fall 2020

COURSE SYLLABUS

INSTRUCTOR: Veronika Skorokhod

E-MAIL: skorokh2@msu.edu (*MANDATORY: always write STT 351-007 in subject line of your email and never reply to the general emails send to the entire course. The emails not meeting these criteria will not be answered.*)

CLASS MEETINGS: M W Th 5:20 am - 6:10 am EST (via Zoom)

To join Zoom:

<https://msu.zoom.us/j/96057352249> Passcode: 770093

Find your local number: <https://msu.zoom.us/j/96057352249>

OFFICE HOURS: M W 12:00 pm – 2:00 pm and by appointment scheduled in advance.

To join Zoom:

<https://msu.zoom.us/j/99262582537> Passcode: 137692

Find your local number: <https://msu.zoom.us/j/99262582537>

COURSE OVERVIEW:

Instruction requires interaction online and at scheduled the meeting times. This synchronous class has required attendance and includes deadlines for completion of learning objectives and testing. Each class meeting will contain the theoretical concepts and the corresponding examples. Since this timeframe may not work for everyone, the class meetings will be recorded and posted on D2L for students to view. There are no recitations in this course.

STATISTICS LEARNING CENTER:

Online help from the teaching assistants is available in Statistics Help Room via Zoom. The details are posted at <https://stt.natsci.msu.edu/academics/statistics-learning-center/>

COURSE WEBSITE:

<https://d2l.msu.edu>

D2L:

D2L is the main source of all course information. You are required to login with your MSU username and password. All course materials including announcements, class meeting recordings, additional practice problems, homework assignments, exams review materials, exams, and your scores will be posted there.

COURSE DESCRIPTION:

STT 351 is intended to provide a basic introduction of probability and statistics to engineering students. The students will learn the theory behind statistical decision making as well as how to implement statistical techniques for various practical applications. Covered topics include descriptive statistics, probability models, random variables. Estimation, confidence intervals, tests of hypotheses, and simple linear regression (if time permits) with applications to engineering.

PREREQUISITES:

MTH 234 or MTH 254H or LB 220. Not open to students with credit in: STT 430.

SUPPLIES:**INTERNET (required):**

With this being an online class, a decent internet connection is crucial (see Technology Issues section below).

Technology Issues:

Technology issues / Internet issues are a student's responsibility. Students should complete assignments significantly before their due date/time, so that any possible technical issues will not become a concern. If you are having extreme Technology / Internet issues, please record the event on your cell phone for evidence, including your attempts to fix the problem. Try to collect as much documentation as possible (such as service report from your internet provider or <https://servicestatus.msu.edu>) to help support your claim. Typically, no extensions (for homework assignments) or makeups (for exams) will be made. However, these will be handled on a case-by-case basis.

TEXTBOOK (required):

Devore J, *Probability and Statistics for Engineering and the Sciences, Custom 8th edition*. Publisher: Cengage Learning. ISBN: 9781305748927. All practice problems and review problems for the exams refer to this edition.

CALCULATOR (required):

Graphic calculator is required. TI-83, TI-84, TI-89, TI-Nspire are recommended. Some instructions for TI-83 and TI-84 series calculators will be provided during the class meetings. However, it is your responsibility to learn how to use your calculator.

Note: some questions in homework assignments and exams will be multiple choice that require calculations. Using software, online calculators, or tables instead of required calculators may provide you with a different answer.

ATTENDANCE:

You are expected to attend all class meetings. *If you miss a class meeting for whatever reason, it is your responsibility to obtain all materials, assignments, and learn the material that you have missed via recordings of class meetings posted on D2L.*

While the office hours provide an opportunity for *some* clarification of materials covered during class meetings, they cannot substitute for the actual class meetings.

HOMEWORK:

There will be five homework assignments (40 points each). The assignments will be given via D2L. Assignments opening and due dates are provided in the *Tentative Course Schedule* on p.8. *Late homework assignments will not be accepted without legitimate reason (medical or family emergency or other exceptional circumstances) with a verifiable proof. There are no makeups for homework assignments. One lowest assignment score will be dropped.* If you get help from any sources for completing your assignments, remember that *you are the only one responsible for the work that you submit.*

EXAMS:

There will be two 60 minutes midterm exams (70 points each) given during class meetings and 2 hours comprehensive final exam (100 points). All exams will be given via D2L. Review materials for all exams will be posted on D2L. Exam questions will be similar to the examples solved in class, practice problems, and homework assignments questions. If you get help from any sources for preparation for the exams, remember that *you are the only one responsible for the work that you submit.*

MAKEUP EXAMS:

Makeup exams will only be given for *a legitimate reason (medical or family emergency or other exceptional circumstances) with verifiable proof.* You must notify your instructor prior to missing an exam (whenever possible). Missing an exam without valid excuse presented to your instructor will result 0.0 points for this exam.

INGORANTIA JURIS NON EXCUSAT:

Students must read the syllabus and be familiar with the course policies and how they will be graded. No extensions or makeups will be granted for students on the basis of not knowing.

GRIEF ABSENCE POLICY:

Information is available at <https://reg.msu.edu/ROInfo/Notices/GriefAbsence.aspx>

ACADEMIC INTEGRITY:

The Department of Statistics and Probability adheres to the policies of academic integrity as specified in General Student Regulations 1.0, Protection of Scholarships and Grades, and in the All-University of Integrity of Scholarships and Grades which are included in Spartan Life: Student Handbook and Resources Guide. Additional information is available at

<https://ombud.msu.edu/resources-self-help/academic-integrity>

ADA:

To arrange for special needs accommodations, you have to contact the Resource Center for People with Disabilities (RCPD) by phone: (517)353-9642 or by email:

<http://www.rcpd.msu.edu> as soon as possible. Don't wait until just before an exam.

Provide your RCPD VISA to your instructor as soon as you obtain it.

MENTAL HEALTH SERVICES:

Mental health concerns or stressful events may lead to diminished academic performance or reduce a student's ability to participate in daily activities. Services are available to assist you with addressing these and other concerns you may be experiencing. You can learn more about the broad range of confidential mental health services available on campus via the Counseling & Psychiatric Services (CAPS) website at <https://caps.msu.edu/>

RVSM:

Michigan State University policy regarding sexual harassment is enforced.

As a university employee, the instructor is a mandatory reporter. Information on the University policy on Relationship Violence and Sexual Misconduct is available at

www.oie.msu.edu

RELIGIOUS OBSERVANCE POLICY:

Information is available at <http://www.interfaith-calendar.org/2020.htm>

ABSENCES, TECHNOLOGY ISSUES, AND COVID-19 POLICIES:

Given our current COVID-19 situation and a large class size, I anticipate that there will be some students with a variety of worthwhile situations related to these extraordinary times that will require them to miss classes and assignments for potentially extended durations. These include but are not limited to illness of self or loved ones, childcare issues, family obligations, loss of internet, or technology issues. It would be impossible to schedule individual makeups for homework assignments, therefore one lowest assignment will be dropped. Problems with exams will be handled on the individual basis. Students can miss up to 3 weeks of classes with little impact on their grades, so long as they learn the material they missed and display their knowledge of these topics on the final exam. If a student misses more than 3 weeks of classes, it is likely that his/her grade will be negatively affected by these absences. Students missing work due to illness beyond the flexibility already afforded in the syllabus are advised to meet with an Academic Advisor of their college to discuss the University's Medical Leave Withdrawal Policy and other avenues for support.

I do not anticipate being absent, but in case this happens, a substitute instructor will be assigned by the Department of Statistics and Probability. In such case all course policies described in this syllabus will remain unchanged.

IMPORTANT DATES FOR FALL 2020

Wed, 09/02	Class begins
Mon, 09/07	Holiday – University closed
Wed, 09/09	Open adds end (8:00pm)
Mon, 09/28	Last day to drop with refund (8:00pm)
Mon, 10/19	Midterm 1
Wed, 10/21	Last day to drop with no grade reported (8:00pm)
Wed, 10/21	Middle of the semester
Wed, 11/18	Midterm 2
Thu, 11/24, Fri, 11/25	Holiday - University closed
Fri, 12/11	Class ends
Mon, 12/14	Final exam (8:00 pm – 10:00 pm EST via D2L)

GRADING:

The course grade will be based on four homework assignments (160 points), two midterm exams (70 points each), and a comprehensive final exam (100 points). Therefore, the total number of points for this course is 400. The course grade will be determined according to the following scale:

Percentage (%)	Course Grade
90% - 100%	4.0
85% - 89.99%	3.5
79% - 84.99%	3.0
73% - 78.99%	2.5
65% - 72.99%	2.0
60% - 64.99%	1.5
55% - 59.99%	1.0
0% - 54.99%	0.0

CURVE:

There is no curve in this course. However, every student will have an opportunity to do the curving (for details see Extra Credit Option section below).

EXTRA CREDIT OPTION:

There will be one bonus problem at the end of each homework assignment. Solving these problems is not mandatory. However, points accumulated from these problems may help you to raise your course grade by up to 5%.

ADVICE FOR STUDENTS:

I believe that every one of you can be successful in an online style statistics course, but it certainly takes work. This course moves in a rapid pace. *Don't fall behind!*
To be successful in this course you need to keep up with all course materials. Mere understanding of the material is not enough. You have to be able to apply basic principles to solve problems and this requires *self-practice!*
Selected practice problems are posted on D2L in PRACTICE PROBLEMS folder.

DISCLAMER:

The instructor reserves the right to make any changes considered academically advisable. Changes will be announced in class. *It is your responsibility to keep up with any changed policies.*

TENTATIVE COURSE SCHEDULE

Week #	Week of	Chapters	Homework (Wed)
<i>All homework assignments are assigned and due on Wednesdays of the corresponding weeks. Due time for all assignments is 11:59 pm EST (US)</i>			
1	August 31	Introduction, 1.1	
2	September 7	Mon: Holiday - University closed, 1.1, 1.2	
3	September 14	1.2, 1.3, 1.4	HW1 is assigned
4	September 21	2.1, 2.2, 2.3	HW1 is due
5	September 28	2.4, 2.5, 3.1, 3.2	HW2 is assigned
6	October 5	3.2, 3.3, 3.4, 3.5	HW2 is due
7	October 12	3.6, 4.1, 4.2	
8	October 19	Mon: MIDTERM 1, 4.2, 4.3, 5.5	
9	October 26	4.3, 4.5	HW3 is assigned
10	November 2	4.6, 5.4	HW3 is due HW4 is assigned
11	November 9	7.1, 7.2, 7.3	HW4 is due
12	November 16	7.2, 7.3, Wed: MIDTERM 2, 8.1	
13	November 23	8.1, 8.2, 8.4 Th, Fri: Holiday - University closed	HW5 is assigned
14	November 30	8.2, 8.3, 8.4	
15	December 7	8.3, 8.4, 8.5, Fri: Review for final exam	Mon, 12/07 HW5 is due
FEW	December 14	Mon: FINAL EXAM (8:00 pm – 10:00 pm EST)	