

SYLLABUS – STAT 243 SECTION 004

Fall 2016

Instructor: Nadeeshani Jayasena (nadeej2@pdx.edu, 503-725-8296)

Office Hours: MW 3.30 – 4.30 pm or by appointment (M305, Neuberger Hall)

Teaching Assistant: Jess Millar (jmillar@pdx.edu)

Open Tutorial: Monday 10.15 am - 12.15 pm and Thursday 4.00 – 6.00 pm (Neuberger Hall 96)

You are encouraged to collect, complete and submit a weekly worksheet during the open tutorial session on Thursday. Only if you are unable to make it on Thursday, then go on Monday. This worksheet is an extra credit and there will be at least one question from the worksheet on the quiz given in the week after worksheet is completed. Further, you may work on your labs and homework assignments and get help from Jess during these sessions.

Lecture Time: TR 12.00 – 1.50 pm

Lecture Room: Neuberger Hall 96

Text Book: *Introductory Statistics* by OpenStax, free at <https://openstax.org/details/introductory-statistics>

Calculator: Graphing Calculator with advanced statistical program is required. The TI-83 Plus, TI-84 or TI-89 models are most widely used. However, cell phones and computers may NOT be used for calculators on exams and quizzes (unless otherwise noted by the instructor). Students will receive a zero on the exam(s) and quiz(s) if such use occurs. Cell phones must be turn off or put on the silent option.

Prerequisites: Undergraduate level [MTH 095](#) Minimum Grade of C- or ALEKS Math Placement Test D

STAT 243: This is the first course in a sequence of two: Stat 243 and Stat 244 which must be taken in sequence. This is a basic course in statistical analysis including presentation of data probability, probability distributions, sampling distributions, estimation, tests of significance, experimental design and analysis of variance, regression and correlation, nonparametric statistics, and use of statistical software. This is designed primarily for non-math students who need to utilize the subject in their own fields. This course lays the foundation for many upper-level courses in most majors.

Attendance: Students are required to attend all lectures in order to be successful in the course. If you happen to miss class, it is your responsibility to retrieve what you missed.

Lectures: Lecture handouts are incorporated in all lectures. Incomplete handouts will be posted on D2L/ Course Content weekly. Students are encouraged to bring these handouts or use a laptop (you will have to type mathematical formula) in class, and complete handouts or make additional notes. You should know what is not on your lecture notes and make additional notes during the class. Please note that completed lecture notes will not be posted or emailed for any reason. You may borrow notes from a friend if you missed a class. Lecture notes are not a substitution for lecture, reading, and practice homework. They are intended to be guide line for the text, outlining some important topics in each section.

Software: We use SPSS for classroom activities and labs. SPSS is not a free software ☹. You can use SPSS available in the computers of NH 96. This computer lab is open 8.00 am – 8.00 pm every weekday during the term. **You can use the computers in this lab when there is no session.** The schedule of this computer lab is available at <http://www.pdx.edu/math/math-computer-lab-schedule>

Free Tutoring: Free tutoring is available at the Learning Center and the schedule of these tutors can be found at <http://www.pdx.edu/tutoring/tutoring-schedule>. Free Statistics tutors are also located in the back room of the computer lab in NH 96. The schedule of these tutors is available at <http://www.pdx.edu/math/stat-tutor-schedule>

Overall course goals:

The purpose of this course is to introduce you to statistics. By the end of this course, you should know

- Why statistics is important (even if you'll never use it in your career)
- The uses of statistics
- The various ways data are collected
- How to use and interpret basic statistical procedures
 - Plots and graphs
 - Descriptive statistics (mean, median, 5-number summary, variance, etc.)
 - Interval estimation
 - Hypothesis testing
- How to use SPSS for statistical analyses and read SPSS outputs

Tentative Course Content:

- **Ch 1 and Ch 2**-Introduction to Statistics and Data Analysis (sample, population, observational and experimental studies, measures of location and variability, basics of data cleaning, graphical methods and data description)
- **Ch 3**-Probability (sample space, events, independent and disjoint events, probability of an event, and probability rules)
- **Ch 4 (4.1-4.6)**-Some Discrete Probability Distributions (binomial, geometric, hypergeometric and Poisson distributions: definitions, probability formulas, expectation and variance)
- **Ch 5 and Ch 6 (6.1-6.2)**-Some Continuous Probability Distributions (uniform, normal, and exponential distributions: definitions, probability formulas, expectation and variance)
- **Ch 7 (7.1, 7.3)**-Fundamental Sampling Distributions and Data Descriptions (Central Limit Theorem and its applications)
- **Ch 8 (8.1-8.4)**-One-Sample Estimation Problems (statistical inference, confidence intervals for the mean, and proportion)
- **Ch 9 (9.1, 9.2)**-One-Sample Testing Problems (statistical hypotheses and their testing, tests for a single mean: cases with known and unknown variances; large sample tests for a single proportion)

To better meet the course goals, a number of activities are incorporated in addition to the lectures. All the assignments will be posted on D2L/ Activities. These activities include in-class quizzes, SPSS labs, and exams, as well as outside of the class activities such as homework. Below each activity is described in detail. All activities except quizzes and in-class activities are scheduled in advance, as is listed in the Tentative Course Calendar, and should be submitted by the due date/time. The students are expected to check D2L regularly. The instructor may change the type of any assignment and the deadline. In these cases, all students will be notified via email. **The quiz and in-class activities will be announced in class one day before the activity day and will not be announced on D2L or emailed to students.**

Answers for quizzes, SPSS labs and midterm exam will be posted on D2L or discussed in class shortly after the due date/time. **Students are allowed to use formula sheets available on D2L and one page of notes (self-prepared, 8½ by 11 inches, typed or hand written or both) in addition to the distribution tables and a graphing calculator during all the activities.** Formula sheets are posted on D2L/ Course Content/ Week 1 module for the students to print out. No formula will be provided by the instructor during any in-class activity.

In case of an emergency, contact instructor for alternatives. In other cases, if a student can't meet the deadline, then he/she should notify the instructor (with a valid official document) before the activity's deadline (including missing a lecture). Otherwise, 0 points will be given for each missing assignment.

IN-CLASS ACTIVITIES:

Quizzes and Activities: All quizzes will be in-class. Students can use only formula sheets and . Quizzes help develop critical thinking skills as they require providing detailed and well-structured arguments, explanations and logical derivations. All quizzes are equally weighted. Answers will be available after due date. Any missed quiz is given 0 points.

There will be in-class activities for collecting and analyzing data from time to time. The in-class activities are used to engage students in data collection and analysis using the methods learn in this class.

Exams: There are 2 mandatory exams during the term. The exams are the main “check points” of students’ progress in the course, and contain problems similar to the ones solved in class or assigned for all the assignments. Students are not allowed to use lecture notes or the textbook during exams. Each exam lasts for 100 minutes and all exams are equally weighted. The final exam is comprehensive. Instructor has right to provide a seating arrangement during exams and different questions on exams and quizzes. **No wireless-capable devices may be used during exams and quizzes.**

OUTSIDE-OF-CLASS ACTIVITIES:

Homework: We will be using the MyOpenMath online homework and assessment tool. Directions for accessing the MyOpenMath can be found under the course Introduction module in D2L/Course Content. Each homework will have about 20 questions and some questions may have more than one attempt. There will be multiple choice and entering answer questions. There will be 6 homework assignments and all are equally weighted. The lowest one homework is replaced by the highest homework grade.

SPSS Labs: These labs are developed to present modern problems with data which can be solved using the course material and a statistical software SPSS. Each lab assignment consists of two parts where one should be completed using SPSS while the other should be done without using SPSS. There will be at least 4 labs throughout the course. These labs help illustrate the importance of presented concepts, application of concepts using SPSS, and eliminate possible background differences. The TA will give hints but never presents a detailed solution for the labs during the Open Tutorial sessions. All lab assignments are equally weighted and should be turned in through D2L by the due date.

Grading Policy and Conversion Guidelines for % Grade to Letter Grade:

The overall grade will be calculated using a formula displayed in the Table 1. The current grade (calculated via this formula) is displayed on D2L so the students can monitor their achievements at any time.

** (In order to receive a Pass with the Pass/No Pass option, a grade of C or better *must* be earned. A grade of C- is *NOT* a passing grade.)

Table 1	Activity	%
In-class	Exams	40
	Quizzes/Activities	20
Outside-of-class	Homework	25
	Labs	15

** Based on the overall grade (%) the letter grade will be assigned according to Table 2 after rounding your grade properly.

Table 2	Score (%)	Letter Grade	Score (%)	Letter Grade	Score (%)	Letter Grade	Score (%)	Letter Grade
	93-100	A	87-89	B+	77-79	C+	67-69	D+
	90-92	A-	83-86	B	73-76	C	63-66	D
			80-82	B-	70-72	C-	60-62	D-
							0-59	F

Disabilities: If you have, or think you may have, a disability that may affect your work in this class and feel you need accommodations, contact the Disability Resource Center to schedule an appointment and initiate a conversation about reasonable accommodations. The DRC is located in 116 Smith Memorial Student Union, 503-725-4150, drc@pdx.edu, <http://www.pdx.edu/drc>.

- If you already have accommodations, please contact me to make sure that I have received a faculty notification letter and discuss your accommodations.
- Students who need accommodations for tests and quizzes are expected to schedule their tests to overlap with the time the class is taking the test.
- Please be aware that the accessible tables or chairs in the room should remain available for students who find that standard classroom seating is not useable.
- For information about emergency preparedness, please go to the Fire and Life Safety webpage (<http://www.pdx.edu/environmental-health-safety/fire-and-life-safety>) for information.

Disturbances: Classroom disturbances that impede on other students' opportunity to learn will not be tolerated. Disturbers will first be asked to stop. If the disturbance continues, the student will be asked to leave class.

Academic Integrity Policy. Students are expected to adhere to guidelines concerning academic dishonesty outlined in University's Student Code of Conduct (<http://www.pdx.edu/dos/psu-student-code-conduct>). Students are encouraged to contact the instructor for clarification of these guidelines if they have questions or concerns.

You (students) are encouraged to work together on homework and SPSS lab problems, but the work you turn in must be your own (unless the assignment specifically states otherwise). Work on exams and quizzes must be your own. **Any act of academic dishonesty will result in a score of zero on the item in question** and notification of department and university officials. Further action may be taken as warranted. Subsequent offenses will result in an F in the class.

STAT 243 -- 004 TENTATIVE CALENDAR Fall 2016

This is an approximate schedule for the course. The dates for topics, assignments and exams may change.

Date	Week		Activities & Assessments
Sep 26 – Oct 2	1	Read:	Syllabus OpenStax, Chapters 1 - 2 Sampling and Data; Descriptive Statistics
Oct 3 – Oct 9	2	Read: Complete:	OpenStax, Chapters 2 - 3 Descriptive Statistics; Probability Topics Getting Started (MyOpenMath Intro) Homework 1 (Chapter 1)
Oct 10 – Oct 16	3	Read: Complete:	OpenStax, Chapter 3 Probability Topics SPSS Lab 1 Homework 2 (Chapter 2)
Oct 17 – Oct 23	4	Read: Complete	OpenStax, Chapters 3 - 4 (4.1 - 4.6) Probability Topics; Discrete Random Variables SPSS Lab 2 Homework 3 (Chapter 3)
Oct 24 – Oct 30	5	Read: Complete:	Chapter 5 Continuous Random Variables Lecture notes, to date Midterm Exam
Oct 31 – Nov 6	6	Read: Complete:	OpenStax, Chapter 5 – 6 (6.1 - 6.2) Continuous Random Variables; The Normal Distribution Homework 4 (Chapters 4 & 5)
Nov 7 – Nov 13	7	Read: Complete:	OpenStax, Chapter 6 (6.1 - 6.2) The Normal Distribution SPSS Lab 3
Nov 14 – Nov 20	8	Read: Complete:	OpenStax, Chapter 7 (7.1 - 7.3) – 8 (8.1 - 8.4) The Central Limit Theorem; Confidence Intervals Homework 5 (Chapters 6 & 7)
Nov 21 – Nov 27	9	Read	OpenStax, Chapter 8 (8.1 - 8.4) Confidence Intervals
Nov 28- Dec 4	10	Read: Complete:	OpenStax, Chapter 9 (9.1 - 9.2) Hypothesis Testing One Sample Lecture notes, to date SPSS Lab 4 Homework 6 (Chapter 8)
Thursday, Dec 8 (10:15 - 12:05)			Final Exam