

## Introduction to Statistics (WEB) - Syllabus

Spring 2017

EDP 371

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**Office:** SZB 538B

**Office Hours:** TTh: 10:45 - 12:15 or by appointment

### Course Materials

**Required:** The title of the course text is: "Stat Sense: Thinking Clearly About Data". The author of this text is Martin Tombari. This packet contains the course objectives that you will be tested over, sample test questions for all exams, homework problems and answers, tables needed to solve test problems, necessary formulae and vocabulary, problems to solve, places to take notes, graph and chart paper to sketch problems, suggested web sites for better understanding and extended practice, links to You Tube videos, and many illustrations. The publisher of this text is Sentia Publishing. You may order the text directly from them at...

[http://www.sentiapublishing.com/search.php?Search=&search\\_query=tombari](http://www.sentiapublishing.com/search.php?Search=&search_query=tombari)

or purchase it at the COOP.

**Optional Workbook:** There is a workbook titled "EDP371 - Spring 2017 Workbook" that contains exercises for you to practice more of the same problems contained in the textbook. Only purchase this if you feel you'll need additional reinforcement of what you have learned.

### Purpose of this course

Welcome to the Spring 2017 online section of EDP 371: Introduction to Statistics. We hope that you find this course interesting, stimulating, challenging and worth all the effort you put into learning the material and mastering the skills.

The purpose of this course is for you to become statistically literate. Throughout this class there will be one central question that we will ask over and over: How can we conclude things about the many, when we only know about the few! How do we say anything meaningful about populations of thousands and millions, when all we have in front of us are small samples! How can we accurately predict the future, when all we experience is the present!

I invite you to accompany your classmates and me on a journey where we hope to do all these magical things.

***This course is mostly self-paced. There are no required lectures or online conferences to attend. The only deadlines are the dates for the four course exams. You can read more about these below.***

As you look at the Canvas Home Page, the left side contains tabs with the names of the principal features of the course. At the top of the page, you will see arranged in a row the titles (1) Courses, (2) Assignments, (3) Grades, and (4) Calendar. You can ignore information on the right side of the page. The most important tabs for you at this point in the course are the Modules tab on the left and the Calendar tab at the top. If you move the cursor to the Modules tab and click on it, you will see the content of the course and if you click on Calendar you will see the dates that tests and certain assignments are due. If you need more assistance with using Canvas, on the left side is a tab called "Canvas Tutorials". Under the tutorial for students, you will find more information about Canvas and how to use it.

The readings for this course are in the course text under Dr. Tombari's name. The text is called ***"Stat Sense: Thinking Clearly About Data"***.

The Syllabus tab shows important dates when tests and assignments are due, so be sure to view this now and plan your semester accordingly. ***The mid-term and final exams are given on campus.***

The Modules tab displays the organization of the course and contains all the readings, media, practice tests, and other resources that you will need to be successful in statistics.

**Please read carefully what follows.**

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## Organization of the Course

**The course is organized into 13 Units. Each Unit contains a variety of resources to help you master statistical reasoning and statistical computations. It is important that you use all these resources.**

### **Objectives and Readings:**

This section identifies the important skills that you will be learning and highlights the main points of the readings. The objectives are the focus of the readings, activities, videos, practice tests, and exams. They indicate what you will be asked to demonstrate on the exams. Thus it is important for you to reflect on these skills and, at the end of each module, judge the extent to which you have learned them. As you study the chapter readings, complete the assignments, watch the videos, and take the practice tests, keep these objectives in mind. Knowing about them will give a focus and sense of purpose for your study, and assure that you will succeed on the exams. If you are not sure what a particular objective means, send us an email, participate in the discussion board, or contact us during office hours. We will be happy to explain exactly what is expected of you.

The Unit readings will explain the whats, whys, and wherefores of what you will be learning. They stress understanding of why the formulas look as they do. There is plenty of opportunity to practice the skills. Your mastery of statistics will depend less on mathematical sophistication than on your clear and logical thinking. There is a logic behind statistical reasoning and problem solving that will require a lot of thought, reflection, and practice to acquire. You will grasp some sections of the readings immediately. Other sections you may have to read, re-read, and re-read again to make some sense of the information. Thinking like a statistician is not something we were born with. It is an acquired skill. Be patient with yourselves and you will get it.

### **Power Point Presentations and Videos**

After you have read and studied the Units, we have provided power point presentations to reinforce what you have learned. Some of these presentations are narrated and include useful visual material. These presentations cover material in the Units in a slightly different way. *These PPTs have been adapted from several text books and may contain some slightly different formulas and symbols than were used in your course packet. Although you may see a Chapter name in the video that is different from the Unit title that it goes with, the material is the same as is presented in each Unit.*

### **You Tube Videos**

We have reviewed some of the best demonstrations of statistical routines and concepts that have been catalogued on You Tube. Along with the PPTs, they will

further enrich your grasp of the important concepts and procedures that you learned in the Units included in the course packet.

### **Recorded Lectures**

My class lectures for Units 4-13 are available for your viewing. Log into [videocenter.edb.utexas.edu](http://videocenter.edb.utexas.edu) and you can watch them. These recordings were made during the spring 2016 semester.

### **Unit Practice Problems**

Each unit includes a variety of questions (and answers) that will prepare you for the 4 course exams. Be sure to do all of them. Taking these tests and evaluating your learning regularly throughout the semester is one of the best ways to learn. These self-tests will let you know how well you have acquired the statistical skills explained in the chapter. These exercises are not graded. They will help you to learn better the skills that you will be tested over.

The best way to prepare for the exams is to do these problems and make sure that you understand exactly why you solved a problem correctly or why you may have gotten it wrong. The more of these problems at the end of each Unit that you do, and the more you understand why you did or did not do them correctly, the more successful you will be on your exams.

### **Review Questions**

Each Unit ends with 10-20 question self-tests to allow you to evaluate how well you have learned the material.

### **Additional Readings**

Each Unit contains a section titled 'Additional Readings. These readings are from on-line textbooks that explain the concepts that you read about in each Unit in a slightly different way. After you have read the Units, and taken the Unit self-tests, if you believe you need more practice or reinforcement, these additional readings are just the thing for you. They contain practice questions and exercises like the ones you been doing in the Units.

### **Four Practice Exams**

You have approximately two weeks between exams. The best way to assess how ready you are to take them is to take the practice exams and score your performance. The questions in these practice tests are similar to the questions on the exams.

You may print copies of these tests and solve the problems, but you need not send them to us. If you answer less than 80% of the questions correctly, you should review the sections in the text book that explained the knowledge and skills that these questions assess.

The answers to these questions are listed on a separate page in the module following the practice test. Try not to guess the correct answer if you are not sure of it. If you do guess and get an item correct, make sure you understand why it is correct after you check your answers with the ones given in the module. And make sure that you understand why you may have gotten a particular question wrong.

Students often visit us during our on-campus office hours and on-line hours to go over these practice tests.

### **Course Exams**

Exams 1 (Units 1-4), and 3 (Units 9 & 10), each contains 30 questions that assess how well you have learned the objectives of the units covered by the exams. The mid-term (Exam 2) and final exam (Exam 4) are 50 multiple choice questions long. The mid-term will cover Units 1-8 and the final 9-13. ***The mid-term and final exams are 2 hours long and are given on campus.***

The best way to prepare for these exams is to make sure that you can demonstrate the skills that each objective describes. If you have done all the assignments and taken the practice tests and done well, then feel confident that you know these skills. The test questions were built directly from the objectives. So if you know how to do the objectives you will know exactly what is expected of you on the tests.

Do not click on the "take the test" button for the 2 online tests until you are ready to complete the test. You are given only 1 attempt at the exams and you will have 75 minutes to complete exams 1 and 3. Once the timer for the online tests has begun, you must complete the test. These exams have deadlines as indicated in the calendar. You have approximately 3 weeks to complete Exams 1 and 3. If you do not complete the exams in this time you will get a zero. There are no make-ups for these tests, unless you provide a legitimate, documented excuse to us. 30% of your grade is based on these two tests so it is very important that you don't miss any.

***If you are more than 30 minutes late for either the mid-term or final exam (with no legitimate and validated excuse) you will not be allowed to take the exam, nor will a make-up be given. You will receive a grade of zero.***

***A legitimate excuse involves personal illness or family emergency only...not traffic, car, bus or any other type of transportation problem.***

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## Course Requirements:

(1) Your grades will be based on: (A) Two Unit exams which will make up 30% of your grade; (B) a mid-term exam which will count 35% of your final grade; and (C) a final exam which will also count 35% of your final grade. Both mid-term and final will be taken at the University of Texas on dates and times shown in the table below. \*

*You must take all exams to receive credit for this course*

*Please Read This NOW!!!!*

### EDP Research Participation Requirement

All students registered for this course must complete a research participation requirement through the Educational Psychology Department subject pool. To do so, you must either complete 5 credits worth of EDP subject pool studies or write the 5-page alternate assignment (a research paper about a roughly 20-page article). Please note the deadlines below:

- To participate in studies, you must first activate your SONA account online at <https://utexas-edp.sona-systems.com>. To do this, activation instructions will be emailed to your official email address during the **second or third week** of classes.
- Studies will be available beginning on **Tuesday, February 14<sup>th</sup>**. The sooner you view the studies, the larger selection you will have.
- The alternate written assignment will be posted on **Tuesday, March 7<sup>th</sup>**. This is for students who either prefer to not participate in studies or who do not meet the 5 credit requirement by the study completion deadline (below).
- To fulfill this requirement through study participation, you must complete 5 credits of subject pool studies by midnight on **Friday, April 21<sup>st</sup>**. Otherwise, you must write the alternate assignment.
- Alternate assignments are due by midnight on the last class day, **Friday, May 5<sup>th</sup>**.

If you have questions about your participation in the EDP subject pool or about the alternate assignment, please visit the following website:

**[http://www.edb.utexas.edu/education/departments/edp/subject\\_pool/students/](http://www.edb.utexas.edu/education/departments/edp/subject_pool/students/)**

If you still have questions, please email the Subject Pool Coordinator, Hien Nguyen, at [edpSubjectPool@austin.utexas.edu](mailto:edpSubjectPool@austin.utexas.edu).

## Some Final Points

You may visit me during on campus or online office hours.

Dates	Topic	Readings
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### How Grades Will Be Assigned

Your grades on all 4 tests will be totaled, averaged, and weighted. The following percentages will be used to assign final grades:

<i>Overall Course Percent</i>	<i>Grade</i>
90% - 100%	A
80% - 89%	B
70% - 79%	C
60% - 69%	D
Below 60%	F

1/15-2/11	<b>What is Statistics?</b> <b>Tables and Graphs</b> <b>Averages</b> <b>Variability</b>	Unit 1 Unit 2 Unit 3 Unit 4
2/12	<b>TEST # 1: Due at 11:59 PM</b>	<b><i>Units 1-4</i></b>
2/13-3/8	<b>Z-scores</b> <b>The Standard Normal Distribution</b> <b>The Central Limit Theorem</b> <b>Confidence Intervals</b>	Unit 5 Unit 6 Unit 7 Unit 8
3/09 or 3/10	<b>On Campus Mid Term Exam (5-7PM, ETC 2.108)</b>	<b><i>Units 1-8</i></b>
3/11- 4/8	Hypothesis Testing Inferences About Averages	Unit 9 Unit 10
4/09	<b>Test # 3: Due at 11:59 PM</b>	<b><i>Units 9 &amp; 10</i></b>
4/10 - 5/6	Correlations and Predictions Inferences About Associations Inferences About Proportions	Unit 11 Unit 12 Unit 13
Final Exam	<b>On Campus Final Exam (Time and Place TBD)</b>	<b><i>Units 9-13</i></b>

### **Schedule of Topics**

### **EXTRA CREDIT OPPORTUNITIES**



Here is an opportunity for students who need a few extra points towards the final grade: Units 8, 10, 11, and 12 include a page called Data Set Exercises. These exercises require you to use data from a data set (the data sets are at the top of the Modules Page [Under Course Introduction and Materials.](#)) You can earn 3 points towards your final grade if you do two of these 4 exercises and submit them to us no later than June 6th, 2017.