

**Instructor:** Yvette Butterworth  
**Text:** *None*; **Beoga.net** material used  
**Hours:** Online **Except**  
Final Thurs, 8/10 5:30pm

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### Course Description:

An introduction to modern methods of descriptive statistics, including collection and presentation of data; measures of central tendency and dispersion; probability; sampling distributions; hypothesis testing and statistical inference; linear regression and correlation; use of microcomputers for statistical calculations. Illustrations are taken from the fields of business, economics, medicine, engineering, education, psychology, sociology and from culturally diverse situations.

### Further Breakdown of Topics and Expectations

1. Distinguish between quantitative and qualitative data; sample and population; descriptive statistics and inferential statistics.
2. Read a graph and conclude what information the graph is conveying about the data.
3. Calculate measures of central tendency, dispersion and relative standing and use these measures to solve application problems.
4. Compute basic probabilities.
5. Define discrete probability distributions and use such distributions to solve application problems.
6. Define continuous probability distributions and use such distributions to solve application problems.
7. Define sampling distributions, state the Central Limit Theorem and use sampling distributions and the Central Limit Theorem to solve application problems.
8. Use confidence intervals to estimate population parameters, or the difference between two population parameters, using the appropriate formula and then interpret the result.
9. Determine the sample size required to estimate a population parameter.
10. Design, set up, and evaluate the results of hypothesis tests.
11. Compare and contrast the use of confidence intervals and hypothesis tests to make inferences about population parameters.
12. Solve application problems utilizing techniques of regression and correlation.
13. Use analysis of variance to make inferences about more than two population means.
14. Solve application problems using categorical data analysis.
15. Demonstrate statistical understanding of inference by participating in a cooperative projects using the computer as a tool for doing statistics and then interpreting and discussing and writing a summary of the work and solution(s) in accurate mathematical language and notation.

### Student Learning Outcomes:

Upon successfully completing of Math 10, the student will be able to:

1. Describe and summarize data effectively.
2. Determine the likelihood of events.
3. Make accurate inferences or predictions about groups of interest using limited information.

### Required Materials:

On-line content can be purchased and accessed through Canvas shell; Scientific Calculator – TI 83 or 84; Pencils, Paper – lined and graph (for notes, graphing and homework), ruler.

## Attendance:

“Attendance” to the “first class” is mandatory. The following constitute first attendance in this on-line summer course. Any student that does not take the syllabus quiz (for 100% on Syllabus Quiz and with the Welcome Discussion completion by Tuesday, 7/11 will give you 100% on a “Pre-Course Quiz”) **and** register for Beoga by Sunday, 7/9 at midnight will be dropped. I will know when you are logged into Beoga because you will be in my gradebook, there is no alternative to being registered in Beoga by 7/9 at midnight, any class member not registered in Beoga by midnight 7/9 will be dropped. In addition, if you miss more than one quiz/midterm, prior to 8/2, without a discussion with me, I reserve the right to drop you from the course. Please contact the instructor or the Admissions and Records Office if you can't continue. *Students on the final grade roster who have not dropped, and who do not show up for the final exam, automatically receive an F in the course – it is your responsibility to drop yourself from the class if you don't wish to continue.* The **add deadline** is Tues., 7/11. The **refund deadline** is Thurs., 7/6. The **NRS deadline** is Tues., 7/11. The **W deadline** is Wed., 8/2.

## Canvas:

### How to log in to Canvas:

1. Log in to MyPortal (<https://myportal.fhda.edu>)
2. Click on the Student tab
3. Look for “My Online Courses” (this applies even if you are in a hybrid or traditional section)
4. Click on “Log into Canvas”

In Canvas click on the link to our class -- It will be titled, “**Su17 Math F010 07W Elementary Statistics**”  
Once in the Canvas course site follow the instructions there.

In the Canvas site, you will notice a link to the website we will be using for the course called [beoga.net](http://beoga.net). There is no traditional textbook required for your class. Instead, you will be accessing online content that will take the place of a text. This content can be purchased and accessed by clicking on the “[beoga.net](http://beoga.net) ONLINE CONTENT” link in Canvas. At this web site you will be accessing online content, communicating with the class, taking exams & quizzes, and accessing homework.

### Troubleshooting

- If you are not able to log in to MyPortal, go directly to the Foothill College Canvas login webpage at <http://foothillcollege.instructure.com> and then type in your Student ID and Password.
- If you have problems accessing or logging into the course, go to the [Student Help Desk](http://foothillcollege.freshdesk.com) at <https://foothillcollege.freshdesk.com> or call the Foothill Online Learning office at (650) 949-7446.
- Once in Canvas, if you are having trouble paying for or accessing the [beoga.net](http://beoga.net) online content, send an email to [support@beoga.net](mailto:support@beoga.net) and they will quickly fix the issue.
- If all else fails, send an email to your instructor ([butterworthyvette@fhda.edu](mailto:butterworthyvette@fhda.edu)) and we will make sure you get help.

## Beoga Shell:

Our shell Beoga.net will be available to you by Sunday, 7/2. The cost is \$65 for the summer term. Access will be disabled the day of our final and if you would like further access you will need to request placement into a shell that does not have access to tests and quizzes by emailing [support@beoga.net](mailto:support@beoga.net). The Beoga link will be in our Canvas Course. If you have problems with the login process please send an email to [support@beoga.net](mailto:support@beoga.net) for help.

## Beoga Material:

Beoga will provide all graded and ungraded material **except** your final and extra credit assignments (3% to the midterm and 3% to over-all grade for a multiple part EC that includes a paper). You will need to pay attention to due dates in Beoga. There are no extensions or make-up work in Beoga. The following are the assignments to pay attention for:

- 4 Quizzes (graded & can be replaced by final score; may be submitted 2 times)
- 2 Labs (Neither of which can be replaced by any other score; may each be done twice)
- Midterm (can be replaced by final score)
- Homework (ungraded; self corrected)
- Sample Quizzes (graded; doesn't count toward your class grade)

On the day of each quiz/midterm/lab is assigned click on the link at the Beoga.net content page. Each quiz will be accessible from Wednesday, 7/5 through the due date specified for each quiz. Quiz due dates will be Mondays at 6AM Pacific Time Zone; pay attention to each quizzes' due date. You can log-in, access the quiz/midterm/lab, print it out, log out, work on it at your leisure, then log back in and submit your answers. The only restriction is that you must submit the assignments by their deadline. Labs will **ONLY** be open during a week-long period.

When you have the *luxury* of multiple submissions the highest score will be used to compute your grade. The purpose of this option is for you to correct any possible submission errors. After the maximum submissions, no changes are allowed. You will not be able to view solutions prior to the close of the assignment. Multiple attempts are help you handle such eventualities as bad internet connections and other problems you may encounter when trying to submit answers.

Once you can see a grade to any assessment (in the gradebook in beoga.net), you will notice that the grade is a live link – click on it to view the original questions, your responses, the correct answers, and detailed solutions to each problem. The key is to use each graded quiz as a learning tool in preparation for future assessments.

Here is how a missing quiz or poor midterm score will be dealt with:

**Example 1:** Quiz 3 score of 0 due to not taking it (or inability to submit it due to technical difficulties) & final exam score of 83% means quiz 3 grade becomes an 83%.

**Example 2:** Midterm score of 71% & final exam score of 84% means midterm grade becomes an 84%.

### Forums:

This is an important component of this course; it is the place where we will meet and interact –a virtual classroom. You can post any pertinent question in the **FORUMS** ANYTIME you have a question (24/7). When you post a question, everyone in the course can see it and ANYONE can answer the questions posted. It is important that you do NOT wait for me to answer the questions; if you know the answer then help out your fellow students. Answering a question will benefit you as well as your fellow classmates. Anytime you have to break down a question to explain your thoughts in writing, you are forced to really have a command of the subject.

I will monitor the **FORUMS** to make sure student answers are correct and to supplement answers to questions that I feel are in need of supplementary information. If you have a question just for me, please email me. If you ask a question in email that I feel the entire class will benefit from don't be surprised if I request that you post it on the **FORUMS** and don't answer for a bit. Just because I am not posting doesn't mean that I'm not monitoring. Do not expect me to be on-line 24 hours a day. Like many of you, I tend to be a night-owl and will answer questions in the late evening. I also tend to check-in early in the morning before the day gets going. I'll do quick-checks during mid-day, but I don't often respond to emails or make posts during those times.

Most important...ASK, ASK, ASK and just as important ANSWER, ANSWER, ANSWER!

It is highly recommended that you subscribe to ALL **FORUMS**. To subscribe:

- Click on any forum
- Click on the forums link in the top left corner of your browser window
- Click on the "subscribe to all forums" in the top right corner

### Quizzes, Labs & Midterm:

There will be 4 quizzes, 2 labs and 1 midterm on Beoga. The quizzes are open from the first Wednesday through the due dates specified below. Each quiz has 2 attempts allowed. The labs are only available during a one-week period from a Wednesday through Monday and have unlimited attempts. The midterm is only available for a short period of time beginning on a Thursday and has only 2 attempts. Here is the schedule:

- Quiz 1 (Chapter 1 & 2): Wednesday, July 5, 3pm PDT **thru** Monday July 10, 6am PDT
- Lab 1: Wednesday, July 12, 3pm PDT **thru** Monday, July 17, 6am PDT
- Quiz 2 (Chapter 2, 3 & 4): Wednesday, July 5, 3pm PDT **thru** Monday July 17, 6am PDT
- Lab 2: Wednesday, July 19, 3pm PDT **thru** Monday, July 24, 6am PDT
- Quiz 3 (Chapter 5): Wednesday, July 1, 3pm PDT **thru** Monday, July 24, 6am PDT
- Midterm (Ch. 1 thru 7): Thursday, July 27, 3pm PDT **thru** Monday, July 31, 6am PDT
- Quiz 4 (Chapter 8): Wednesday, July 1, 3pm PDT **thru** Monday, August 7, 6am PDT

Quizzes have 2 attempts, so you can redo them 1 time to allow for ANY glitches in submission. Only your highest score, rounded to the nearest 100<sup>th</sup> of a percent, will be used to compute your grade. The questions will change with

each attempt however. Once the due date for a quiz has passed, you will get a grade in the Beoga.net gradebook that will become a “live link”. If you click on the grade you can then view each question, your response, and the correct solution. Notice that all quizzes are open from the beginning of the course until the time by which you should be completing the material to stay on task. This long window is so that you can work at your own pace.

Quizzes/Midterm can't be re-opened for ANY reason. **PLEASE BE AWARE OF YOUR TIMEZONE!** It is your responsibility to go over the material for each of the quizzes in advance of the quiz opening and to be prepared to take the assignments that are open simultaneously. If you miss a quiz your final exam score will replace the quiz score. Your final exam score can also be replace any quiz score that is lower. This means that your final could potentially contribute to 90% of your grade. It is not wise to allow your final that much weight – the practice you get on each quiz is extremely valuable!

The Midterm will have **two** attempts. You can print it out, saving without submitting, work the problems, check and double check your work, and then log back into the Beoga.net material, enter your answers, save without submitting, check that everything has been entered correctly, and then submit prior to the deadline stated above.

### Final Exam:

The final will be given on **Thursday, August 10, 2017 from 5:30-7:30pm**. The final will be cumulative; a practice final will be available on Beoga as a PDF file. The final exam is worth 60% of your grade and will replace any quiz or midterm score that is lower (this includes missed quizzes and midterm).

If you do not live in the San Francisco Bay Area you are eligible to have your final exam proctored. I have provided additional information in a separate document on proctoring. Please find the proctoring document on Beoga or in your email. Follow the instructions outlined by, Friday, July 28.

### Grades:

Beoga Quizzes	15%	<u>Percentage Ranges for Letter Grades</u>
Beoga Midterm	15%	<b>A:</b> 91.45%↑ <b>A-:</b> 89.45%-91.44%
Beoga Labs	10%	<b>B+:</b> 86.45% - 89.44% <b>B:</b> 81.45% - 86.44% <b>B-:</b> 79.45% - 81.44%
<u>Final Exam</u>	<u>60%</u>	<b>C+:</b> 76.45 - 79.44% <b>C:</b> 69.45 - 76.44%
<b>Total</b>	<b>= 100%</b>	<b>D:</b> 59.45% - 69.44%
		<b>F:</b> 59.44%↓

### Student Honesty:

Cheating will not be tolerated! Talking to anyone but me, helping another student during the FINAL, bringing notes of any type, copying information from another person's exam, using external sources of information for which you were not explicitly given permission to use (including any calculating device not explicitly stated as appropriate, phones and pda's included) is considered cheating. Students caught participating in such activities will be given an F in the course (regardless of class standing)! Cheating incidents will also be reported to the Dean of Students and further action could be taken in accordance with school policy.

### Student Grievances:

Please refer to the grievance policy in the college catalog if you have any questions.

### Student Special Services:

Students requiring special services or arrangements because of hearing, visual, or other disabilities should contact their instructor, counselor, advisor, or Disabled Student Services. To contact the Disabled Student Services you may:

- Visit the office in Room 5400 (near parking lot 5)
- Email the office at [adaptivelearningdrc@foothill.edu](mailto:adaptivelearningdrc@foothill.edu)
- Talk with the office by calling (650) 949-7017

I encourage all students with special needs to contact me as early as possible to arrange for any classroom assistance and to discuss your needs. If you have accommodations for testing you must contact me to discuss your needs at the beginning of the class and a week prior to the FINAL to make final arrangements. Remember that it is your responsibility to make arrangements with testing services to take your final as close to the time of our final (our time is 6:30pm) as possible on Thursday, August 10.

## Additional Information:

I reserve the right to make changes or additions to my syllabus at any time during the quarter. I will notify you via class discussion of any changes or additions. The college catalogue overrides my syllabus at any time.

A class meeting in-person would require that you are in class 4 days per week for 2.25 hours with an additional 18 hours spent outside the class room per week. You should not expect to spend ANY LESS time per week when taking an on-line class. Many students take an on-line class thinking that it will somehow require less time or effort than an in-person class – this is a misconception. You are responsible for the same material, but you will need to acquire the information on your own. I set the pace of the material so that you can complete it by the day of the final. You have a lot of flexibility in how you spend your “class time” and study time, but you will still be spending a comparable amount of time to a student learning the material in an in-person class.

## Proposed Schedule by Week:

- Week 1(7/3-7/9) **Ch. 1** Branches of Statistics, Vocabulary, Classification of Data, Statistical Process  
**Homework** for Ch. 1  
**Knowledge Test** Ch. 1  
**Ch. 2** Graphs, Symmetry, Measures of Center, Measures of Variation, Chebyshev’s & Empirical Rule, Measures of Relative Standing  
**Homework** for Ch. 2 (§2.2-2.7)  
**Knowledge Test** Ch. 2  
**Quiz 1 (Ch. 1 & 2)** Opens Wednesday, 7/5 3pm & Closes Monday, 7/10 6am
- Week 2(7/10-7/16) **Ch. 3** Vocabulary of Probability, Probability Notation, Heart & Soul of Probability, Conditional Probability, Independent & Dependent Events, Complement of an Event  
**Homework** for Ch. 3  
**Knowledge Test** Ch. 3  
**Ch. 4** Binomial Distribution, Binomial PDF vs. CDF, Calculating Binomial Probabilities, Mean & Standard Deviation of a Binomial, Symmetry in the Binomial, Empirical Rule & Binomial,  
**Homework** for Ch. 4  
**Knowledge Test** Ch. 4  
**Lab 1** Opens Wednesday, 7/12 3pm & Closes Monday, 7/17 6am  
**Quiz 2 (Ch. 2, 3 & 4)** Opens Wednesday, 7/13 3pm & Closes Monday, 7/13 6am
- Week 3(7/17-7/23) **Ch. 5** Normal Probabilities, Z-Scores, Probability Notation, Normal CDF, Calculator Technique for Normal CDF, Finding Random Variable Values for Normal Distribution, Inverse Normal Distribution, Application of Normal Distribution & Inverse Normal, Interpretation of Results, Normal Approximation to Binomial  
**Homework** for Ch. 5  
**Knowledge Test** Ch. 5  
**Quiz 3 (Ch. 5)** Opens Wednesday, 7/5 3pm & Closes Monday, 7/24 6am  
**Ch. 6** The Central Limit Theorem (Distribution of Means), Requirements for Central Limit Theorem, Standard Error, Probabilities Using CLT, Applications of CLT, Interpretation of Results  
**Homework** for Ch. 6  
**Knowledge Test** Ch. 6  
**Lab 2** Opens Wednesday, 7/19 3pm & Closes Monday, 7/24 6am
- Week 4(7/24-7/30) **Ch. 7** Confidence Intervals Involving 1 Sample, Flow Charts for CI for  $\mu$  or  $p$ , CIs for Two Samples, Flow Charts for  $\mu_1 - \mu_2$  or  $p_1 - p_2$ , Decisions based on positive, negative or interval with zero, Small vs. Large Sample Intervals for means, Pooled vs. Non-Pooled Standard Deviations  
**Homework** for Ch. 7  
**Knowledge Test** Ch. 7  
**Midterm (Ch. 1-7)** Opens Thursday, 7/26 3pm & Closes Monday, 7/31 6am  
**Ch. 8** Setting Up Hypotheses – Null & Alternative, Determining Tail of a Test, Calculating P-Value (normal CDF) of Test Statistic, Determining the Distribution to Calculate P-Value, Significance Level & Concluding a Test (Decision), Conclusion of a Test

**Homework** for Ch. 8  
**Knowledge Test** Ch. 8

Week 5(7/31-8/6) **Quiz 4** Opens Wednesday, 7/5 3pm & Closes Monday, 8/7 6am

**Ch. 9** Review of Linear Equations, Scatterplots, Visual Correlation, Mathematical Correlation, Independent to Predict Dependent Values, Linear Regression Equation, Predictions from Linear Regression Equation, Multiple R Value, Acceptable Parameters for Regression Equations' Use, Interpretation of Slope of Regression of Equation

**Homework** for Ch. 9  
**Knowledge Test** Ch. 9

**Ch. 10** Comparison of more than 2 means, ANOVA, Different Alternative Hypothesis, Explanation of the variation among the means as the measure, F-Distribution and measure of LARGE variation between vs within groups, Large F-Statistic allows to conclude there is a difference in means, Reading ANOVA Table, Conclusions of ANOVA

**Homework** for Ch. 10  
**Knowledge Test** Ch. 10  
Take Sample Final

Week 6(8/7-8/11) **Ch. 11** Categorical Analysis, Two-Way Tables, Hypotheses for Categorical Analysis, Expected Values, Observed Values, Chi-Squared Test Statistic, Large Values would be rare for unrelated (think beyond 3 for z-score).

**Review** Material Missed in Sample Final  
**FINAL** In-Person at Foothill Campus, Thursday, 8/10 at 5:30pm in Rm TBA