RICHLAND COLLEGE DEPARTMENT OF MATHEMATICS
School of Mathematics, Science, and Health Professions
Course Syllabus for Math 1342: Elementary Statistical Methods
3 credit hours

INSTRUCTOR'S INFORMATION
(Instructor reserves the right to amend this information as necessary.)

Semester and Year:	Spring 2019
Section:	81008 - 83008
Class time and days:	MW 8:00 – 9:20 am
Room:	D166
Instructor:	Shaheen Ahmed
Contact Info:	sahmed@dcccd.edu
Last date to withdraw:	April 17th, 2019
Final Exam Day and time:	Tuesday, May 14th; 8:00 – 9:50am
Hawkes Course ID:	Login using ecampus

Evaluation Procedures

Category	Percentage
Attendance & Participation	10%
Online Hawkes Lesson	20%
Unit Exams (3 total)	30%
Final Exam	40%

GRADING SCALE: A: 90-100%;   B: 80-89%;   C: 70-79%;   D: 60-69%   F: below 60%

Required Materials:
- Textbook: <u>Beginning Statistics (2nd Edition)</u>, Warren, Denley and Atchley.
  ISBN: 978-1-941552-50-6
    - Textbook purchase is NOT required.
    - Hawkes Access Code purchase is required. (includes eBook)
- Graphing calculator is required. A TI-84 Plus is strongly recommended. If you use a different calculator, it should be one without a computer algebra system or algebraic manipulation ability. Graphing calculators are available for rent at the Richland Bookstore.

A 10-day temporary access to Hawkes is available so that you may get started on the course. Your access must be updated with a valid, purchased code prior to the end of the 10 days or your access will be closed.

Instructor Policies and Suggestions for Student Success:

Attendance and Participation (10%)
In order to be successful, students must attend and participate in enrolled courses. Remember that phone calls, texting, messaging, food and drinks are not allowed in classrooms. Plan accordingly. In a mathematics lecture/discussion class, regular attendance is vital to success. I expect punctual class attendance. Students are not permitted to conduct unwarranted class interruptions by exiting and reentering class without approval. If you anticipate your late arrival or an early departure from a class session, you should discuss the circumstances with me before class begins. Continual disregard of any of these policies could

result in your expulsion from the course. Students with disabilities who may need academic accommodations should discuss options with their professors during the first two weeks of class. Absences (missing more than 5 minutes of any class session) will affect your daily attendance grade and cannot be made up.

Online Hawkes Lessons (20%)
A. Log in to Hawkes using your .edu email address.
B. Click on "View Course" and choose the "To-Do List" or "Lessons" to begin working through the course.
C. All lessons consist of 3 components:
  a. Learn: As its title suggests, this is where the instruction for the course takes place. Read through the ebook here, taking careful notes. You may also view videos and work through interactive examples to strengthen your understanding.
  b. Practice: Practice unlimited problems to prepare for Certify without affecting your score. Here you will receive immediate feedback on answers. This will help you not only understand what answers are incorrect, but why.
  c. Certify: This is the homework phase. Work completed here will count toward your grade. Answer questions cautiously while reviewing your notes from previous phases. If you struggle with this phase, you will be returned to Practice to try these problems again without penalty.
D. Suggestion: Work the Practice and Certify problems in a notebook, showing written work for **all** problems so that you can see what the problem was asking, and what steps you used to arrive at the answer. E. Ask your instructor for assistance as needed.
F. Study for exams by reviewing the homework problems that you worked out in your notebook.
G. Graduated late penalty will apply to work submitted after the deadline as follows:
  a. 10% - up to 2 days late
  b. 20% - up to 4 days late
  c. 30% - up to 6 days late
  d. 50% - more than 6 days late

Note: Do not wait until the due date to begin assignments! If you run into a technical issue, you may not have time to resolve it before the deadline.

Unit Exams (30%)
Tests will be administered during class time on the dates stated in the course calendar that follows.
- Content: Corresponding sections listed on Hawkes and in your syllabus
- Time Limit: 80 minutes
- Questions: Approximately 8 - 10 (one per lesson)
- Question Format: Free response and critical thinking required
- Written Work: **Students will not receive credit for correct answers without demonstrating supporting work.**

- Exam Results: If class time does not permit, I am happy to review any of your tests with you in detail during office hours.
- Exam Preparation: The best way to study for the exam is to review the problems you completed in Hawkes lessons.
- Exam Attempts: There are no make-ups or retakes for any reason.

Final Exam (40%)
- Content: All course material (cumulative)
- Time Limit: 110-minutes
- Question Format: Free response and critical thinking required (expect approximately one question per chapter)
- Written Work: **Students will not receive credit for correct answers without demonstrating supporting work.**
- Exam Results: I am happy to review any of your exams with you in detail. Please contact me for an appointment to do so.
- Exam Preparation: The best way to study for the final exam is to review previous exams.
- Exam Attempts: There are no make-ups or retakes for any reason.

GETTING HELP
Persistence is only productive if you continue to learn. Don't allow frustrations to keep you from moving forward. Use your resources! You can set an appointment with me if you need help. The Learning Center (TLC) in M-216 also offers drop-in tutoring. Perhaps one of the most powerful resources available to you is your classmates. Form study groups and work together to get through class challenges

COURSE SPECIFIC INFORMATION

Catalog Course Description
Collection, analysis, presentation and interpretation of data, and probability. Analysis included descriptive statistics, correlation and regression, confidence intervals and hypothesis testing. Use of appropriate technology is recommended.

Prerequisites
College level ready in Mathematics at the non-algebra or algebra levels.

Course Objectives and Learning Outcomes
1. Develop an understanding of basic numerical and statistical concepts.
   - Explain the use of data collection and statistics as tools to reach reasonable conclusions
   - Distinguish between observational and experimental study designs.
   - Recognize, examine and interpret the basic principles of describing and presenting data

2. Assist in understanding and applying a limited aspect of descriptive and inferential statistics.
   - Compute and interpret empirical and theoretical probabilities using the rules of probabilities and combinatorics
   - Explain the role of probability in statistics
3. Gain experience in analyzing elementary problems of a statistical nature, choosing the proper methodology, and interpreting the result statistically.
   - Examine, analyze and compare various sampling distributions for both discrete and continuous random variables
   - Describe and compute confidence intervals
   - Solve linear regression and correlation problems
   - Perform hypothesis testing using statistical methods

Core Statement

Math 1342 is a core course for Core 2015. It is in the Foundational Component Area of Mathematics. Courses in this category focus on quantitative literacy in logic, patterns, and relationships. Courses involve the understanding of key mathematical concepts and the application of appropriate quantitative tools to everyday experience.

The following core objectives will be addressed and assessed through the content covered in this course:

- Critical Thinking Skills: to include creative thinking, innovation, inquiry, and analysis, evaluation and syntheses of information
- Communication Skills: to include effective development, interpretation and expression ideas through written, oral and visual communication
- Empirical and Quantitative Skills: to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions.

Specific Content Coverage

Section	Title	Objectives
1.1	Getting Started	1
1.2	Data Classification	1
1.3	The Process of Statistical Study	1
1.4	How to Critique a Published Study	1
2.1	Frequency Distributions	1
2.2a	Graphical Displays of Data: Pie Charts and Bar Graphs	1
2.2b	Graphical Displays of Data: Histograms, Polygons, Stem and Leaf Plots	1
2.3	Analyzing Graphs	1
3.1	Measures of Center	1
3.2a	Measures of Dispersion	1
3.2b	Applying the Standard Deviation	1
3.3	Measures of Relative Position	1

4.1	Introduction to Probability	2
4.2	Addition Rules of Probability	2
4.3	Multiplication Rules for Probability	2
4.4	Combinations and Permutations	2
4.5	Combining Probability and Counting Techniques	2
5.1	Discrete Random Variables	3
5.2	Binomial Distribution	3
6.1	Introduction to the Normal Distribution	3
6.2	Finding Area Under a Normal Distribution	3
6.3	Finding Probability Using a Normal Distribution	3
6.4	Finding Values of a Normally Distributed Random Variable	3
6.5	Approximating a Binomial Distribution Using a Normal Distribution	3
7.2	Central Limit Theorem with Means	3
7.3	Central Limit Theorem with Proportions	3
8.1	Estimating Population Means (Sigma Known)	3
8.2	Student's t-Distribution	3
8.3	Estimating Population Means (Sigma Unknown)	3
8.4	Estimating Population Proportions	3
9.1	Comparing Two Population Means (Sigma Known)	3
9.2	Comparing Two Population Means (Sigma Unknown)	3
9.3	Comparing Two Population Means (Sigma Unknown, Dependent Samples)	3
9.4	Comparing Two Population Proportions	3
10.1	Fundamentals of Hypothesis Testing	3
10.2	Hypothesis Testing for Population Means (Sigma Known)	3
10.3	Hypothesis Testing for Population Means (Sigma Unknown)	3
10.4	Hypothesis Testing for Population Proportions	3
10.6	Chi-Square Test for Goodness of Fit	3
10.7	Chi-Square Test for Association	3
11.1	Hypothesis Testing: Two Population Means (Sigma Known)	3
11.2	Hypothesis Testing: Two Population Means (Sigma Unknown)	3
11.3	Hypothesis Testing: Two Population Means (Sigma Unknown, Dependent Samples)	3
11.4	Hypothesis Testing: Two Population Proportions	3
12.1	Scatter Plots and Correlation	1
12.2	Linear Regression	1

Academic Dishonesty in Math Classes

Academically dishonest behavior is, in general, the representation of another's work as one's own. This includes unauthorized collaboration between students, and on exams it includes using books, notes, or other unauthorized materials or websites or apps during the exam. Students who behave in academically dishonest ways may have their grade penalized, or be subject to disciplinary action by the Dean of Students. Students who collaborate during exams or use unauthorized materials or websites or apps on exams may, at the instructor's discretion, have the exam grade lowered or be given a grade of zero. In the instance that a student is given the grade of zero on a unit exam, the right of having any unit exam grade replaced with the Final Exam grade is forfeited. Students who are academically dishonest on the Final Exam may, at the instructor's discretion, have the grade lowered, be given a grade of zero on the final, or be given the grade of F in the course.

Cell phone and other communication devices

Any electronic communication devices such as cellular phones are to be turned off and put away in your back pack during the entire class, during every class meeting. Any student who either receives an incoming call or message or uses the device will be asked to leave the class. "Others are in the class to learn and your disruption will not be tolerated." Should you have a mitigating circumstance e.g.(sick child, university calling , on-call at work etc.) please let me know, put your phone on mute and I will allow you to keep your phone on your desk. If called you will leave the classroom to answer it. Unless cleared with the instructor beforehand, it is never appropriate to receive or send any text or voice message during class meetings in this or any course you will ever take. Any use of laptop computers or personal desktop assistants, etc. that is non-class related will result in that student asked to take note by pen and paper. Sleeping, putting one's head down on the desk or chatting with another student will achieve the same result, in being asked to leave.

RICHLAND COLLEGE INSTITUTIONAL POLICIES

Institutional Policies relating to this course can be accessed from the following link: www.richlandcollege.edu/syllabipolicies