**Math 103 Statistics**

 **Section :** MAT 103-050 T,TH 12:30 – 1:45 PM

**Mrs. Robin McNally Office**:  bottom floor of Lawson (Academic Support Office ASO)

 **Office Hours:**  M,W 2:00 – 3:00

**770- 720- 5566****rcm@reinhardt.edu**

​**Textbook**: Hawkes Online textbook and homework system

**Course ID**:​ ReinhardtSTAT​

**Supplies:**

* **DO NOT** purchase a used License Number or Access Code (from other students or online vendors). License Numbers and Access Codes are registered to the original purchaser only.
* A TI83 or TI 84 calculator is required for the course. If you do not have a TI graphing calculator you will NOT be able to pass this class. Sharing of calculators is not permitted for the test. If you do not have a graphing calculator you should drop this class and register for another class you can be more successful with.

**Credit Hours:**  3 credit hours Over 15 weeks, students will spend 150 minutes per week in lectures, class discussions, and examinations (37.5 hours for the semester). Instructional time includes a 3-hour final exam. Out of-class work includes homework and preparation for exams and quizzes and is estimated at around 300 minutes per week (75 hours for the semester).

# I. COURSE COVERAGE: Chapters 1-12 (selected topics)

# II. CATALOG DESCRIPTION: This course is an introduction to elementary descriptive and inferential statistics. Topics include frequency distributions, measures of central tendency and variation, elementary probability theory, binomial and nor-mal distributions, hypothesis testing, tests on two means, sample estimation of parameters, confidence intervals, coefficient of correlation and linear regression. *Prerequisite: University placement, or a grade of P, or C or better in any MAT course numbered 100 or above.*

# III. CONCEPTUAL FRAMEWORK:

# The Mathematics Department at Reinhardt University believes that all students should have an exposure to the ideas of science and the scientific method. This includes exposure to laboratory procedures, familiarity with some of the vocabulary of science and ability to read scientific articles in the newspaper or in popular magazines.

# The Mathematics Department at Reinhardt University believes that all students should be familiar with the systematic development of science through history. This includes an understanding of the effects that science has had on history and that history has had on scientists.

**The Mathematics Department at Reinhardt University wishes to convey to students that science is a continuing endeavor that will not ever be finished.** This includes an introduction to the interaction of theory and observation.

# IV. COURSE RELATIONSHIP TO CONCEPTUAL FRAMEWORK: This course will be taught using applied problems, exercises, a graphing calculator and softwares like Mathematica, Maple or GeoGebra. Mathematical tools will be introduced as needed in the applications.

**V. MATHEMATICS PROGRAM OBJECTIVES:** The Mathematics Program at Reinhardt University offers courses geared to
**MPO1** Analyze and solve problems by using reasoning, logic and evidence, and by bringing knowledge from a wide range of mathematical areas.

**MPO2** Use effective written and oral expression of mathematical concepts in the creation of a mathematical argument by recognizing a wide range of mathematical terms and vocabulary.

**MPO3** Apply axiomatic systems.

**MPO4** Apply mathematical research methodologies by using libraries, informational technologies, computer programming and numerical methods in order to create solutions to problems.

**MPO5** Apply ethical, legal, and policy issues to Information Technology

**MPO6** Create IT solutions to solve organizational problems.

**VI. MATHEMATICS PROGRAM STUDENT LEARNING OUTCOMES:** Taking this course, students will be able to

**SLO1** Solve a word problem by applying the appropriate mathematical setup, obtaining the mathematical solution, and interpreting this solution in the context.

**SLO2** Solve a theoretical problem by identifying the appropriate mathematical context, interpreting the question and the nature of the solution, and checking that the solution is correct.

**SLO3** Complete a proof or produce a mathematical object that satisfies specific properties.

**SLO4** Solve a problem by consulting various resources, applying appropriate technological tools, and using adequate approximations.

**SLO5** Analyze how information technology affects ethical and legal issues.

**SLO6** Synthesize appropriate solutions to organizations' problems.

**VII. ALIGNMENT TO REINHARDT UNIVERSITY SLO’s:**

|  |  |  |
| --- | --- | --- |
| **Math PO** | **Math SLO** | **RU SLO** |
| 1 | 1 | 1, 2, 4 |
| 2 | 2 | 1-4 |
| 3 | 3 | 1-4 |
| 4 | 4 | 1-4 |
| 5 | 5 | 1-4, 7 |
| 6 | 6 | 1-4 |

# VIII. COURSE OBJECTIVES: As a result of passing MAT 103 a student should be able to

1. graphically present statistical data in a number of ways (SLO1, SLO2, and SLO4),
2. evaluate measures of central tendency (mean, median, mode) and variation (standard deviation, range) (SLO1, SLO2, and SLO4),
3. apply basic techniques of discrete probability (sample spaces, addition rules, multiplication rules, conditional probability) (SLO1, SLO2, and SLO4),
4. know the basic characteristics of the binomial distribution, the Poisson distribution and the hypergeometric distribution (SLO1, SLO2, and SLO4),
5. understand and apply normal distributions and the central limit theorem (SLO1, SLO2, and SLO4),
6. evaluate confidence intervals for the mean of a set of data (SLO1, SLO2, and SLO4),
7. apply the basic methods of hypothesis testing (SLO1, SLO2, and SLO4),
8. test the difference between means, variances and proportions (SLO1, SLO2, and SLO4),
9. apply a linear regression analysis (SLO1, SLO2, and SLO4),
10. evaluate chi-squared tests for goodness of fit, independence and homogeneity of proportions (SLO1, SLO2, and SLO4),
11. create and present a report based upon statistics (SLO1, SLO2, and SLO4).

**IX. POLICES:**

**Cell Phone Policy:** Please turn off or turn all cellular phones on silent. Do not use them in class without prior permission by your instructor.

**Attendance:** Students are expected to attend each session. If you miss a class, you are responsible for finding out what was covered and getting the work done.

**Academic Dishonesty:** The Reinhardt University academic dishonesty policy will be followed. You will earn a zero for the assignment or exam in which you are found cheating.

* All students are expected to adhere to the highest standards of academic integrity, and to abide by the Reinhardt Honor Code. Also, all students are expected to be familiar with the Reinhardt policy on academic dishonesty stated in the University Catalog and in the Student Handbook. Plagiarism (using the ideas and phrases of others without crediting them, therefore claiming those ideas and phrases as your own) will not be tolerated in this course or on this campus. To avoid such academic dishonesty, you must use a citation (footnote or in text) for all ideas drawn from your reading and research, including research in encyclopedias and online, even when you have restated those ideas in your own words.
* The Office of the Vice President for Academic Affairs will be notified of actions taken against students who violate the academic integrity policy, which may result in further consequences, including designation of “academic warning” on your official transcript, academic suspension, or expulsion for academic reasons.

**COURSE REQUIREMENTS/ASSIGNMENTS/GRADING SYSTEM:**

 If you are absent on the day of a test, then that will be your lowest test grade dropped and you MUST take the final exam*.***THERE ARE NO MAKEUP TESTS GIVEN FOR ANY REASON**. If you know you have to miss a test ahead of time you can make arrangements to take the test at an earlier time or day.

If no tests have been missed then the lowest test will be dropped when you take the final exam

The grades will be determined as follows:

 Tests ​​​​75% (three tests total)

Homework  ​​​15%

Project ​​​ 10%

Total  ​​​​100%

 **GRADING SCALE**:

​ A​ 90-100

​​​B ​80-89

​​​C ​70-79

​​​D​ 60-69

​​​F​ Below 60

**PROJECT**:  The group project must be an analysis of data written in a report form. It must be typed and double-spaced and must be suitable for presentation to a supervisor or to the public. Some data will be available from Reinhardt University. If you have some data available from a place of employment, you may use it as long as it is OK with your employer. The presentation should include graphical and numerical data as well as explanatory text. A title page and a statement of the problem should also be included. Projects will be presented to the class the final week of classes. (10 minute presentations)

**For Free Tutoring and Help with Homework:**

The Center for Student Success located on bottom floor of Lawson, room 035, is a free tutoring service available to all students. For appointments--go to Reinhardt webpage; click on Academics. When the next page appears, click Center for Student Success. On that screen, click Student Appointment Form.  Fill out required fields and then submit.  If you would prefer to call, the number is 770-720-9232.

**The Americans with Disabilities Act (ADA)** is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you have a documented disability requiring an accommodation, please contact the Academic Support Office (ASO).

Reinhardt University is committed to providing reasonable accommodations for all persons with disabilities. Therefore, if you are seeking classroom accommodations under the Americans with Disabilities Act, you are required to register with the Academic Support Office (ASO). ASO is in the basement of Lawson Building. Phone is 770- 720- 5567. To receive academic accommodations for this class, please obtain the proper ASO letters/forms.

**CORSE SCHEDULE**:

Presentation of Chapters 1, 2 and 3------approximately 4 weeks and then TEST 1

Presentation of Chapters 4,5,6,7 and 8 ------approximately 5 weeks and then TEST 2

Presentation of Chapters 9, 10, 11, and 12 ------approximately 5 weeks and then TEST 3

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