Math 103S - STATISTICS WITH INTEGRATED SUPPORT

1. **Course Description**
   - This course introduces the use of probability techniques, hypothesis testing, and predictive techniques to facilitate decision-making. Topics include descriptive statistics; probability and sampling distributions; statistical inference; correlation and linear regression; analysis of variance, chi-square, and t-tests; and application of technology for statistical analysis, including the interpretation of the relevance of statistical findings. Students use appropriate statistical techniques to analyze and interpret applications based on data from a broad range of disciplines. The course includes just-in-time support for these topics. UC CREDIT LIMITATION: Credit for BTEC 180/BTEC 180H, BUS 204/BUS 204H, MATH 103/MATH 103S, PSYC 104/PSYC 104H, or SOC 125.
2. **Topics Covered**
   - The course includes just-in-time support for the following topics.
   - Descriptive statistics;
   - Probability and sampling distributions;
   - Statistical inference;
   - Correlation and linear regression;
   - Analysis of variance,
   - Chi-square,
   - T-tests;
   - Application of technology for statistical analysis, including the interpretation of the relevance of statistical findings.
3. **What to expect?**
   - **Time: The most common term lengths are listed below; others would be proportionate. Outside of class time is studying, completing homework, reviewing, etc.**

Length of term	In-class time	Out-of-class time (typical)	Total hours/wk (typical)	Total Term hours (typical)
17 weeks	6 hrs/wk	9 hrs/wk	15	255
8 weeks	12.8 hrs/wk	19.2 hrs/wk	32	255
6 weeks	17 hrs/wk	25.5 hrs/wk	42.5	255

   - Technology: We may be using modern statistical technologies such as ArtOfStat Web Applets (FREE), or RStudio Cloud (FREE), Python on Google Colab (FREE), etc.
4. **Who should enroll?**
   - This course is for students who need statistics and have struggled with intermediate algebra.
   - This course could be the last math class many students need for their major to graduate and/or transfer.

5. **What prior knowledge students need to know to be successful?**
    - Operations on Numbers
        i. Perform signed number arithmetic
        ii. Calculate powers of a number (using technology)
        iii. Calculate the square root of a number (using technology)
        iv. Understand order of operations in expressions and formulas
            1. Parentheses/ Brackets, Exponents, Multiplication/Division, Addition/Subtraction
    - Equations and Inequalities
        i. Evaluate algebraic expressions
        ii. Solve a linear equation in one variable
        iii. Plot an ordered pair (x, y) in a rectangular coordinate system