Course Overview

- **Description from the Official Course Catalog.** BA 652: Statistical Analysis (3). Prerequisites: Classified graduate standing and basic statistics.

- **Prerequisites as stated in the Official Course Catalog.** Catalog Description: Understanding and application of statistics for problem solving and managerial decision making.

- **Course Design.** The course design is primarily lecture with supplemental PowerPoints.

- **Description of the Purpose and the Content of the Course.** The purpose of the course is to develop skills in problem solving and decision making through the use of business analytics. Thus, the topics to be covered focus on statistics and decision-making under uncertainty. The course covers many of the following concepts: statistical analysis and its role in business and management, the use of calculators, computer software, and spreadsheets, graphing, graphing techniques, interpretations of graphs, basic characteristics of data (discrete vs. continuous), levels of measurement (nominal, ordinal, interval, ratio), measures of central tendency, measures of variability, probability theory, probability distributions (normal, binomial, Poisson, hypergeometric, t, F, chi-square, r, etc.), distribution shapes, normal approximations, moments about the mean, skewness and kurtosis, Tchebycheff’s theorem, z-scores, sampling and sampling distributions, standard error terms, the central limit theorem, hypothesis testing, statistical inference, contingency tables, chi-square analysis, z-tests and t-tests with one-sample, two-sample, and paired-differences situations, confidence intervals, analysis of variance with one, two, and more than two factors, design of experiments, model building, correlation, regression, multiple regression, intercepts, slopes, linear and nonlinear models, model comparisons, nonparametric statistics, total quality management, run charts, control charts, process control, and process capability analysis, as time permits.

- **Student Learning Outcomes:** Student learning outcomes are defined as follows:

  SLO 1: Formulate hypotheses for decision making and research.
  SLO 2: Select appropriate statistical tools for examining and analyzing data.
  SLO 3: Collect and use appropriate data from samples to make inferences about populations.
  SLO 4: Check, validate, and subsequently analyze data using appropriate statistical techniques.
  SLO 5: Apply probability theory in decision making situations.
  SLO 6: Follow ethical practices in the interpretation of data, statistical analyses, and graphics.
  SLO 7: Present statistical results using graphics, text, and the spoken word.

- **Real Life Relevance.** The course emphasizes the use of statistics and business analytics for problem solving and decision making in the real world of business. The applications of these concepts also impact ethical decisions and ethical business practices; public responsibility and citizenship; an organization’s impact on the external environment and society; employment of ethical business practices; the value of a valid, reliable, stable, and secure information system; and the practice of Fairness, Accountability, Credibility, Transparency, and a Systematic approach (the FACTS) as business professionals and members of the global society.
• **Relation to Other Courses.** Ultimately, students will learn to apply statistical methods and business analytics when appropriate in such areas as accounting, finance, information systems, general management, human resource management, marketing, supply chain management, entrepreneurship, financial and tax planning, information systems, international business, real estate, and taxation.

**Enrollment Information**

• **Prerequisites.** Beyond the catalog prerequisites stated above, students should have had exposure to basic algebra, introductory calculus, graphing, exponential and logarithmic functions, scientific calculators, computer software, and spreadsheets.

• **Procedures for Adding the Course.** Depending on enrollment, class size, classroom space, fire codes, and instructor judgment, students may obtain an add code from the appropriate channels. Students will need the schedule number given in the online class schedule and the Add Code. Students then log into the SDSU Web Portal by the schedule adjustment deadline and follow the instructions. An Add Code can be used only once, and it cannot be given to another student. Using an Add Code without proper authorization from the instructor will result in disciplinary action. Adding the course will only be allowed by permission from the instructor.

• **Procedures for Dropping the Course.** To drop a course, students must log on to the registration system in the SDSU Web Portal by the schedule adjustment deadline and follow the instructions given. This is a very important date, and students need to be aware of that date.

**Course Materials**

• **Required Materials.** The required course materials are as follows:

  • *HP-17bII+* financial calculator

Students are expected to bring both volumes of *Statistical Methods* to class on a regular basis, as well as their *HP-17bII+* calculators. The calculators will be used throughout the course.

• **Recommended Materials.** At a minimum, students should have access to Microsoft PowerPoint, Word, and Excel. They are encouraged to use the most current versions of these software programs. If a student does not have or cannot afford such software, he or she can use one of the computer labs to download materials, utilize software available on campus, and use the macros provided in class. For students only having access to Mac computers and find they are unsuccessful at downloading or using instructor-developed materials due to incompatibility, such students are encouraged to use one of PC computers available in the campus labs.

• **Options for Accessing Course Materials.** Required course materials such as books, calculators, and ParScore/Scantron sheets will be available at the SDSU Bookstore. Additional course materials will be available through Blackboard.

• **Options for Accessing and Using Other Resources.** Materials will be made available to students through Blackboard. Such material will include: a) a more detailed version of the course syllabus; b) syllabus updates; c) copies of all PowerPoints used in class, usually including both pptx versions and pdf versions; d) a number of Excel statistical macros created by the instructor; e) practice problems with answers; f) information and guidelines about examinations; g) any required assignments; and h) other materials as deemed appropriate for the course.

**Course Structure and Conduct**

• **Style of the Course.** The course will primarily follow the traditional lecture approach, with the encouragement of class participation in discussions whenever appropriate. The sequence of topics to be covered will be announced in class.
Students will be informed in advance regarding which topics will be covered each class session. Students will also know in advance when the examinations will occur and what topics need to be studied in preparation for the examinations. It is essential that students set aside adequate time each week for this class. Past experience indicates that working the practice problems alone will not be adequate preparation for success; students must read the materials as well.

- **Individual and Group Activities Required.** No group activities will be required in this course. Required individual activities include three examinations, a written research proposal, and homework assignments.

- **Technology Utilized in the Course.** Technology utilized in the course includes the use of the HP-17bII+ programmable scientific calculator, the use of Excel and PowerPoints, access to Blackboard, and access to the Internet.

### Course Assessment and Grading

- **Approximate Due Dates.** Appropriate due dates for any major assignments or exams will be listed in the syllabus. Those dates must remain flexible but will vary no more than one week from the date stated in the most current version of the syllabus. Students will always know the dates of the examinations at least one week before administration, and usually much earlier. The due date for the research proposal will be listed in the syllabus. Due dates for homework assignments will also be listed in the syllabus; they will usually be due one week after they become available. The homework must be submitted within the first 15 minutes of the onset of that class period.

- **Scored Activities and Weightings.** Scored activities will be converted to “Quality Points,” as determined by a quantitative conversion of test grades and homework scores a quality points system. The instructor will determine letter grade cutoffs for each of the tests separately and independently. Once letter grades have been determined, the raw scores are discarded and are no longer used as part of the grading process. Instead, the quality points earned on each examination are used. The quality points are as follows: A+ = 15, A = 14, A− = 13, B+ = 12, B = 11, B− = 10, C+ = 9, C = 8, C− = 7, D+ = 6, D = 5, D− = 4, F+ = 3, F = 2, and F− = 1. The details for quality points regarding the homework and the required research proposal will be explained elsewhere.

- **Policy Regarding Attendance.** Students are expected to attend classes on a regular basis for the full length of the class period. Quality points may be deducted at the discretion of the professor, based on attendance factors.

- **Policy Regarding Make-Up Examinations.** Make-up of exams will be allowed in accordance to university policies based on fully justified reasons and the severity of the student’s situation on the date of the examination. Acceptable excuses include documented illness from a medical authority, documented accident, documented family emergency, documented death in the family, or other situations defined by the university as severe.

- **Policy Regarding Incompletes.** The grade of Incomplete will only be granted in accordance with University policy. Students should become familiar with University policy regarding such matters. Generally speaking, an Incomplete is only justified when a small “portion of required course work has not been completed and evaluated in the prescribed time period due to unforeseen, but fully justified reasons, and that there is still a possibility of earning credit.” Fully justified reasons refer to compelling events beyond the student’s control (e.g., significant documented illness, death in the family, accidents, etc.). A small portion of required course work implies just that—only a very small part of the course has not yet been completed, and this small part is specifically related to the time period of the underlying conditions for the absence. Unless one of these conditions prevails, students are not to request consideration for an Incomplete. Before an Incomplete will be granted, a contract must be signed by both the instructor and the student, specifically stating the compelling circumstances for granting the Incomplete, the necessary work to be completed for removal of the Incomplete, and the date by which the work is to be completed. Documents justifying the granting of an Incomplete are to be attached to the contract. The University Senate Policy allows one calendar year to remove a grade of Incomplete.
### Other Course Policies

- **Number of Exams.** There will be three tests given in the course. Test dates will be announced at least one week in advance.

- **Homework.** Homework will be required. Students should make copies of their completed homework, including their answers, before submitting them. This will allow students to compare their homework responses to the corresponding answer keys shortly after the answer keys are posted on Blackboard.

- **Research Proposals.** The research proposals (also referred to as RSPs) will be required.

- **Cheating Policy.** My policy on cheating and plagiarism is consistent with the policies of San Diego State University. Although there will be various forms used on every test, with the items, stems, and locations of items randomized on each form, there may be temptations to beat the system. The University Senate’s Policy File serves as the primary source for rules and regulations regarding both cheating and plagiarism. Please do not take a chance of putting your grade in jeopardy or placing yourself in such an embarrassing and painful situation. During exams, please do not look around, glance at anyone else’s examination materials, or behave in any manner that might cause even the slightest appearance of giving or gaining information from another person. Such behavior often leads to suspicion and concern. The penalty for any form of cheating in my course usually results in an F in the course and possible probation, suspension, or expulsion from San Diego State University. For more information, please review the *Publication Manual of the American Psychological Association* (APA Manual) for guidelines regarding plagiarism and review San Diego State University’s policy on both cheating and plagiarism given in the Senate Policy File.