1) GENERAL INFORMATION
   a. Course Director: Dr. Brian Chrzan
   b. Course Director Email: Brian.Chrzan@unlv.edu
   c. Office Location: SDM B225
   d. Office Telephone Number: 774-4579
   e. Department: Biomedical Sciences/Orthodontics
   f. Designation: Post-Graduate Dental Education
   g. Type: Required
   h. Day and Time Course Offered: Thursday, 8-9 am
   i. Location(s) of Class: SDM D228

2) COURSE DESCRIPTION
   a. This course is an introduction to biostatistics which provides a broad overview of statistical methods and application in healthcare.
   b. Prerequisites – Acceptance to a UNLV Advanced Education Program or approval from the Course Director

3) LEARNING RESOURCES
   c. Manuals
   d. Other – Journal Articles, PowerPoints, Online resources
   e. Reading assignments

4) PARTICIPATING FACULTY
   a. Dr. Brian Chrzan

5) COURSE GOALS AND OBJECTIVES
   a. Understand the role of statistics in the scientific process
   b. Understand hypothesis testing and writing a hypothesis
   c. Understand and identify levels of evidence provided in scientific articles
   d. Become familiar with basic concepts and methods of biostatistical analysis
   e. Understand importance of concepts such as probability theory, randomization, controls, blinding, confidence intervals, and statistical significance
f. Apply statistical methods to individual research proposals

6) CODA Standards ADDRESSED/SUPPORTED
   CODA Standards for Advanced Education Program in Orthodontics
   a. Study and critically evaluate the literature and other information pertaining to this field? (4-3.3o)
   b. Does the orthodontic and dentofacial orthopedics graduate have familiarity with biostatistics (4-4.a.)
   CODA Standards for Advanced Education Program in Pediatric Dentistry
   c. Is instruction provided at the understanding level in the following sciences: BIOSTATISTICS and CLINICAL EPIDEMIOLOGY: Including probability theory, descriptive statistics, hypothesis testing, inferential statistics, principles of clinical epidemiology and research design; (4-3.1)

7) EVALUATION
   a. Grading Scale: Pass/Fail
   b. Examinations/Quizzes
      i. There are no examinations or quizzes in this course
   c. Grade Determination
      i. Professionalism and Attendance 15%
      ii. Participation 15%
      iii. Assignments 70%
      iv. Total 100%
   d. Posting/Notification of Grades: Grades will be posted on MyUNLV
   e. The UNLV SDM Student Handbook, III: UNLV School of Dental Medicine Student Code of Professional Responsibilities and Appendices outline the professional behavior expected of students attending UNLV SDM. Failure to act in a professional manner, as determined by faculty, may affect a course grade. Unprofessional conduct may result in failure of course.

8) COURSE SCHEDULE (INSTRUCTIONAL SESSIONS)

<table>
<thead>
<tr>
<th>Session</th>
<th>Date</th>
<th>Topic</th>
<th>Presenter(s)</th>
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<tr>
<td>1</td>
<td>Jan 12</td>
<td>Chapter 1: Statistics and Probability Are Not Intuitive</td>
<td>Dr. Chrzan</td>
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<td>2</td>
<td>Jan 19</td>
<td>Chapter 2: The Complexities of Probability</td>
<td>Dr. Kevin Quan</td>
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<td>Chapter 3: From Sample to Population</td>
<td>Dr. Kevin Quan</td>
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<td>3</td>
<td>Jan 26</td>
<td>Chapter 4: Confidence Intervals</td>
<td>Dr. Megan Baker</td>
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<td>Chapter 5: Types of Variables</td>
<td>Dr. Megan Baker</td>
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<td>4</td>
<td>Feb 2</td>
<td>Chapter 6: Graphing Variability</td>
<td>Dr. Alice Trieu</td>
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<td>Chapter 7: Quantifying Variation</td>
<td>Dr. Alice Trieu</td>
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<td>Week</td>
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| 5    | Feb 9 | Chapter 8: The Gaussian Distribution  
Chapter 9: The Lognormal Distribution and Geometric Mean |                       |
| 6    | Feb 16| Chapter 10: Confidence Interval for a Mean  
Chapter 11: Error Bars                                                                 | Dr. Cale Forgues      |
| 7    | Feb 23| Chapter 12: Comparing Groups with Confidence Intervals  
Chapter 13: Comparing Groups with P Values                                                | Dr. Cale Forgues      |
| 8    | Mar 2 | Chapter 14: Statistical Significance and Hypothesis Testing  
Chapter 15: Interpreting a Result That Is (Or Is Not) Statistically Significant | Dr. Nora Ghodousi     |
| 9    | Mar 9 | Chapter 16: How Common Are Type I Errors?  
Chapter 17: Multiple Comparisons                                                           | Dr. Jason Klingler    |
| 10   | Mar 16| Chapter 18: Statistical Power and Sample Size  
Chapter 19: Commonly Used Statistical Tests                                               | Dr. Haley Buchanan    |
| 11   | Mar 23| Spring Break – No Class                                                                   |                       |
| 12   | Mar 30| Chapter 20: Normality Tests  
Chapter 21: Outliers                                                                        | Dr. Joe Cinelli       |
| 13   | Apr 6 | Tweed Course                                                                             |                       |
| 14   | Apr 13| Chapter 22: Correlation  
Chapter 23: Simple Linear Regression                                                          | Dr. Mark Whiting      |
| 15   | Apr 20| Chapter 24: Nonlinear, Multiple, and Logistic Regression  
Chapter 25: Common Mistakes to Avoid When Interpreting Published Statistics            |                       |
| 16   | Apr 27| TBA                                                                                      |                       |
| 17   | May 4 | TBA                                                                                      |                       |

9) **SPECIFIC CLASS POLICIES AND PROCEDURES**

a. Attendance Policy: Refer to SDM Handbook  
b. Other Class Specific Policies: Presentations must be in PowerPoint
10) UNIVERSITY WIDE POLICIES/PROCEDURES

a. Disability Resource Center

UNLV complies with the provisions set forth in Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990, offering reasonable accommodations to qualified students with documented disabilities. Please note that the UNLV Disability Resource Center (DRC) coordinates all accommodations for students with documented disabilities. The DRC is the official office to review and house disability documentation for students, and to provide them with an official Academic Accommodation Plan to present to the faculty if an accommodation is warranted. The DRC strongly encourages faculty to provide accommodations only if and when they are in receipt of said plan. Faculty should not provide students accommodations without being in receipt of this. If you have a documented disability that may require accommodations, you will need to contact the DRC for the coordination of services. The DRC is located on the main campus in the Student Services Complex (SSC), Room 137, and the contact numbers are: VOICE (702) 895-0866, TTY (702) 895-0652, FAX (702) 895-0651. For additional information, please visit: http://drc.unlv.edu. In addition, you will need to promptly inform the UNLV SDM Office of Student Affairs of any determination made by the DRC.

b. Copyright and Fair Use

The University requires all members of the University Community to familiarize themselves and to follow copyright and fair use requirements. YOUR ARE INDIVIDUALLY AND SOLELY RESPONSIBLE FOR VIOLATIONS OF COPYRIGHT AND FAIR USE LAWS. THE UNIVERSITY WILL NEITHER PROTECT NOR DEFEND YOU NOR ASSUME ANY RESPONSIBILITY FOR EMPLOYEE OF STUDENT VIOLATIONS OF FAIR USE LAWS. Violations of copyright laws could subject you to federal and state civil penalties and criminal liability, as well as disciplinary action under University policies. Additional information can be found at http://provost.unlv.edu/copyright/statements.html

The information provided to you in this course in the form of handouts, outlines, synopses, PowerPoint presentations, tests, etc. are the intellectual property of the individual faculty. These materials are provided for student use only within the domain of the UNLV School of Dental Medicine. Use of this material by students outside the University setting or distribution of this material to anyone not affiliated with the UNLV SDM constitutes a copyright violation.

c. Observance of Religious Holidays
As a general rule, a student missing a class or laboratory assignment because of observance of a religious holiday shall have the opportunity to make up missed work. **Students must notify the course director of anticipated absences by the last day of late registration to be assured of this opportunity.** Faculty may give students an additional week to complete missed work, but must set a clear deadline. Note: Student who represent UNLV SDM at any official extracurricular activity shall also have the opportunity to make up assignments, but the student must provide official written notification to the instructor no less than one week prior to the missed class(es).

d. **Falsification of Documents or Other Information**

The UNLV Student Conduct Code and the UNLV School of Dental Medicine prohibits the forgery and falsification of any documents or records. This includes, but is not limited to, the forging, altering, misusing, providing or causing any false information to be entered on ANY University or School of Dental Medicine PRINTED OR ELECTRONIC documents, records (including patient records), or identification cards. The falsification of data, improper assignment of authorship of school work or other scholarly activity, claiming another person’s work as one’s own, unprofessional manipulation of experiments or of research procedures, or misappropriation of research funds will not be tolerated. Commission of any act of forgery or falsification as described will result in disciplinary action and sanctions as stated in the School of Dental Medicine Honor Code.

e. **Academic Misconduct**

Academic integrity is a legitimate concern for every member of the campus community; all share in upholding the fundamental values of honesty, trust, respect, fairness, responsibility and professionalism. By choosing to join the UNLV community, students accept the exceptions of the “Student Academic Misconduct Policy” and are encouraged when faced with choices to always take the ethical path. Students enrolling in UNLV assume the obligation to conduct themselves in a manner compatible with UNLV’s function as an educational institution. An example of academic misconduct is plagiarism: “Using the words or ideas of another, from the internet or any source, without proper citation of the sources.” For more information regarding the “Student Academic Misconduct Policy” (approved December 9, 2005), go to [http://studentlife.unlv.edu/judicial/misconductPolicy.html](http://studentlife.unlv.edu/judicial/misconductPolicy.html) or the UNLV School of Dental Medicine Student Handbook for more information.

f. **E-Mail**
By policy, faculty and staff should only e-mail students SDMail accounts. SDMail is the UNLV School of Dental Medicine official e-mail system for students. It is one of the primary ways students receive official university communication. All UNLV SDM students receive an SDMail account after admission to SDM. As a reminder, sending information by e-mail should be done in an appropriate and professional manner.

**g. Consensual Relationships:**

UNLV prohibits romantic or sexual relationships between members of the university community when one of the individuals involved has direct professional influence or direct authority over the other. For further information, go to [http://hr.unlv.edu/Policy/consensual.html](http://hr.unlv.edu/Policy/consensual.html).

**h. UNLV Writing Center:**

One-on-one or small group assistance with writing is available free of charge to UNLV students at the Writing Center, located in CDC-301. Although walk-in consultations are sometimes available, students with appointments will receive priority assistance. Appointments may be made in person or by calling 895-3908. The student’s Rebel ID Card, a copy of the assignment (if possible), and two copies of any writing to be reviewed are requested for the consultation. [http://writingcenter.unlv.edu/](http://writingcenter.unlv.edu/)

**i. Tutoring**

The Academic Success Center (ASC) provides tutoring and academic assistance for all UNLV students taking UNLV courses. Students are encouraged to stop by the ASC to learn more about subjects offered, tutoring times and other academic resources. The ASC is located across from the Student Services Complex, #22 on the current UNLV map. Students may learn more about tutoring services by calling 895-3177 or visiting the tutoring web site at: [http://academicsuccess.unlv.edu/tutoring/](http://academicsuccess.unlv.edu/tutoring/)