DEPARTMENT OF PHYSICAL EDUCATION AND KINESIOLOGY

COURSE OUTLINE – WINTER 2016

TR 8:30- 9:50 PM (A3): PE 1090: STATISTICS, MEASUREMENT AND EVALUATION – 3 (3-0-1) 60 Hours

INSTRUCTOR:	Matthew Bain	**PHONE:**	(780) 539-2974
OFFICE:	K 221	**E-MAIL:**	mbain@gprc.ab.ca
OFFICE HOURS:	Monday 11-12 pm & Thursday 1 -2 pm or by appointment		

CALENDAR DESCRIPTION The course will introduce students to the concepts of validity and reliability as they apply to quantitative research, measurement, and evaluation in physical education, sport, exercise science, and leisure contexts. The course will focus primarily upon inferential statistical procedures that are used to organize, summarize, and interpret information.

PREREQUISITE(S)/COREQUISITE: N/A

REQUIRED TEXT/RESOURCE MATERIALS:

- Terrell, S.R. (2012). *Statistics translated: A step-by-step guide to analyzing and interpreting data.* New York, NY: The Guilford Press.
- Morrow, J.R., Jackson, A.W., Disch, J.G., & Mood, D.P. (2011). *Measurement and evaluation in human performanc*e (4th ed.). Champaign, IL: Human Kinetics, Inc.

DELIVERY MODE(S): The course will be taught using various methods of delivery such as lecture, experiential learning opportunities, small group discussion, and use of statistical software for calculation and analysis (i.e., SPSS).

COURSE OBJECTIVES:

1. The student will be introduced to, and be able, to recognize the important structure of basic statistical concepts.
2. The student will demonstrate the use of selected statistical techniques: standard z-scores, t-statistics, correlation coefficients, ANOVA, and chi-square.
3. The student will be able to make concrete observations and decisions regarding empirically supported data for current research and testing measures in the field of sport, exercise, and physical education.
4. The student will learn to enter and interpret data results using appropriate statistical technology (i.e., SPSS) with links to statistical theory.

LEARNING OUTCOMES:

1. The instructor will explore concepts in tests and measures and the use of technology for statistical calculations.

2. The instructor will utilize datasets (small and large) in order to support statistical principles being examined and applied in class.
3. The instructor will introduce descriptive statistics and normal distribution.
4. The instructor will examine, in depth, the calculation, application, and interpretation, of selected statistical techniques.
5. The instructor will introduce and explore hypothesis testing.
6. The instructor will introduce concepts and key terms for reliability and validity to students.

TRANSFERABILITY:
UA

Please consult the Alberta Transfer Guide for more information (http://alis.alberta.ca/ps/tsp/ta/tbi/onlinesearch.html?SearchMode=S&step=2)

** Grade of D or D+ may not be acceptable for transfer to other post-secondary institutions. **Students are cautioned that it is their responsibility to contact the receiving institutions to ensure transferability**

EVALUATIONS:

Final (DATE: TBD)	35 %: Examination is cumulative from all materials throughout the semester.
Midterm Evaluations (2): 1: Jan 28 &. 2: Mar 8	20 %: Each of the midterm examinations will be cumulative to the time of the exam.
Seminar & SPSS Reports:	25%: These reports include work completed during seminar sections and appropriate write-ups demonstrating an understanding for content.

GRADING CRITERIA: (The following criteria may be changed to suite the particular course/instructor)

SEMINAR & SPSS REPORTS: Students will follow methodological procedures by applying statistical procedures used in the field of research and determining accurate statistical calculations for evaluating their outcomes. Interpretations for the results will be included in the assignment as well. Activities from both assigned textbooks will be utilized. SPSS software will be utilized.

MIDTERM EXAMINATIONS: Each of these examinations will be cumulative to the materials covered throughout the exploration of the relevant chapter topics and readings. These examinations will be a combination of multiple choice questions and critical thinking questions.

FINAL EXAMINATION: This examination will include a combination of multiple choice and critical thought questions. This combination is designed to prompt the student to recruit various topics

covered throughout the semester and demonstrate competence in constructing a logical point of view using different theoretical topics in sport and physical activity research contexts.

Alpha Grade	4-point Equivalent	Percentage Guidelines		Alpha Grade	4-point Equivalent	Percentage Guidelines
A+	4.0	90-100		C+	2.3	67-69
A	4.0	85-89		C	2.0	63-66
A-	3.7	80-84		C-	1.7	60-62
B+	3.3	77-79		D+	1.3	55-59
B	3.0	73-76		D	1.0	50-54
B-	2.7	70-72		F	0.0	00-49

COURSE SCHEDULE/TENTATIVE TIMELINE:

WEEK	ASSIGNED READINGS (M = Morrow) (T = Terrell)	SEMINAR PROGRESSION
Jan 7, 12 & 14	Chapter 1 (M): Concepts in Tests & Measures Chapter 6 (M): Norm-Referenced Reliability and Validity Chapter 7 (M): Criterion-Referenced Reliability and Validity	Jan 15: Chapter 2 (Morrow et al., 2011)
Jan 19, 21, & 26	Chapter 2 (M): Using Technology in Measurement & Evaluation (Morrow et al., 2011) Chapter 1 (T): Identifying a Research Problem and Stating Hypothesis Chapter 2 (T): Identifying independent & Dependent variables in hypothesis	Jan 22: Chapter 2 (Morrow et al., 2011) Jan 29: Chapter 1 & 2 (Terrell, 2012)
Jan 28, Feb 2, 4, 9, & 11	Chapter 3 (M): Descriptive statistics & the normal distribution Chapter 4 (M): Correlation & Prediction (Selected) Chapter 3 (T): Measures of Dispersion & Measures of relative standing	Feb 5 & 12: Chapter 3 & 4 (Morrow et al., 2011)
Feb 15-21	Reading Break	Reading Break
Feb 23- 25	Chapter 5 (M): Inferential statistics	Feb 25: Chapter 5 (Morrow et al., 2011) Chapter 5 (Terrell, 2012)
Mar 1- 3	Chapter 5 (T): Choosing the right statistical test	Mar 4: Choosing Tests (Terrell, 2012)
Mar 8-10	Chapter 6 (T): The One-Sample T-Test	Mar 11: One-Sample T-test
Mar 15 -17	Chapter 7 (T): The independent Sample t-test	Mar 18: Independent Sample t-test
Mar 22-24	Chapter 8 (T): The Dependent Sample t-test	Mar 25: Dependent Sample t-test
Mar 29-31	Chapter 9 (T): The analysis of Variance	Apr 1: ANOVA
Apr 5-7	Chapter 11 (T): The Correlational Procedures	Apr 8: Correlation
Apr 12	Final Exam Review	

STUDENT RESPONSIBILITIES:

Refer to the College Policy on Student Rights and Responsibilities at www.gprc.ab.ca/d/STUDENTRIGHTSRESPONSIBILITIES

- All assignments must be submitted in typed format adhering to ALL APA format requirements.
- Assignments are due on the dates established by the instructor. Extensions may be offered in lieu of SIGNIFICANT student issues and concerns as determined by the instructor. ALL extensions requests MUST be submitted to the instructor prior to the due dates. Percentage penalties will be applied up to 100 % of the assignment grade if assignments are submitted late.
- Regular attendance is important to success in this course. Classroom activities support student comprehension of materials, content clarification, relevant peer questions and support. It is the student's responsibility to acquire the material missed and to complete assigned readings, in-class work, and assigned homework.

STATEMENT ON CELL PHONE AND OTHER PERSONAL ELECTRONIC DEVICES:

- Users of cell phones and other personal electronic devices must be attentive to the needs, sensibilities and rights of other members of the College community. The use of these devices must not disrupt the functions of the College overall and its classrooms and labs. Instructors have the right to have strict individual policies related to cell phones in order to provide and maintain a classroom environment that is conducive to learning and the respect of others.

- Smart phones, & PDAs must be turned off and placed out of sight in classrooms and computer labs during instructional time. Devices can be turned on and set to silent mode only with the expressed consent of individual instructors. Sending or receiving text messages or gaming on a cell phone during class is not acceptable. In addition, cell phones and other personal electronic devices incorporating cameras must be turned off and out of sight in any area in which individuals have reasonable expectations of privacy. This includes classrooms and computer labs.

- If cell phones, pagers, calculators, recorders, digital cameras, PDAs, players or other personal electronic devices are used inappropriately for the purposes of cheating or academic dishonesty, then students who do so will be penalized appropriately under the Academic Honesty policy of Grande Prairie Regional College.

STATEMENT ON PLAGIARISM AND CHEATING:

Cheating and plagiarism will not be tolerated and there will be penalties. For a more precise definition of plagiarism and its consequences, refer to the Student Conduct section of the College Admission Guide at http://www.gprc.ab.ca/programs/calendar/ or the College Policy on Student Misconduct: Plagiarism and Cheating at www.gprc.ab.ca/about/administration/policies/**

**Note: all Academic and Administrative policies are available on the same page.