Western Washington University
Department of Physical Education, Health and Recreation
KIN 506: Research Design in Human Movement and Performance
Fall 2017

Instructor: Gordon Chalmers, Ph.D. Office: CV 201G Phone: 650-3113
Email: gordon.chalmers@wwu.edu Course Web Page: http://myweb.facstaff.wwu.edu/chalmers
Office hours: Mon 1:30-2:30, Wed 1:30-2:30, Fri 1:30-4. To book an office hour meeting:
https://gordonchalmers.youcanbook.me/

Note: If my office hours are booked but you need to discuss class topics with me before an appointment is available, email me and request a meeting for a class question and we will set a time to meet outside of regular office hours.

Course Time: Tues & Thurs 3:00-4:50 Location: CV 265 (& computer lab, see class schedule)

OBJECTIVES

On completion of this course students should have an understanding of the fundamental processes associated with proposing a thesis project and analyzing data in kinesiology and sport psychology research. More specifically, students will develop and demonstrate their ability to:

- understand different research methods used in kinesiology and sport psychology
- select a topic area for study
- identify and define a problem within a topic area
- conduct a literature review on a specific topic
- design a research investigation, including statistical analysis
- statistically analyze data
- interpret results obtained from research
- present material in written and oral formats

PREREQUISITES

Undergraduate statistics course covering the topics of: Data description (mean, standard deviation, variance, histogram), data bivariate relationships (scatter gram, correlation, regression), comparison of means of two groups (independent and dependent t tests), and basic nonparametric statistical tests (e.g., chi-square). Students will be requested to show evidence of prior or concurrent registration in such a course.

READINGS

2) Lecture notes. Available from the course website (address at top of page). The notes package also contains a copy of all the assignments.
3) Guidelines & Regulations for Masters Degree Candidates in the PEHR department. Also used for KIN 690. Available from the graduate program page in the KIN program web site.

COURSE CONTENT

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<td>Introduction to research</td>
<td>3-23</td>
<td>3 – 23</td>
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<td>Developing a problem &amp; using the literature</td>
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<td>4</td>
<td>APA style</td>
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<td>5</td>
<td>Planning &amp; reporting your methods</td>
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<td>61 – 72</td>
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<tr>
<td>6</td>
<td>Advanced correlation &amp; regression topics</td>
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Comparisons of two groups: effect size, power, sample size  147 - 157  135 – 144

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<th>EVALUATION</th>
<th>% OF FINAL GRADE</th>
<th>DUE DATE</th>
<th>EVALUATION ITEM CONTRIBUTES TO THESE SLOs</th>
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<tbody>
<tr>
<td>Literature Search Assignment</td>
<td>15</td>
<td>10/19</td>
<td>2, 3, 4, 8</td>
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<tr>
<td>Discuss outline for literature review chapter with Dr. Chalmers</td>
<td>0</td>
<td>11/2</td>
<td>1, 2, 6</td>
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<tr>
<td>Statistics Asst. #1: Descriptive Statistics</td>
<td>4</td>
<td>11/7</td>
<td>4, 5, 6, 8</td>
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<tr>
<td>Statistics Asst. #2: Correlation &amp; regression</td>
<td>5</td>
<td>11/9</td>
<td>4, 5, 6, 8</td>
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<tr>
<td>Statistics Asst. #3: Comparing two groups</td>
<td>9</td>
<td>11/14</td>
<td>4, 5, 6, 8</td>
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<tr>
<td>Statistics Asst. #4: One-way, within group ANOVA</td>
<td>5</td>
<td>11/14</td>
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<tr>
<td>Statistics Asst. #5: Two-way ANOVA, Between-Between</td>
<td>8</td>
<td>11/21</td>
<td>4, 5, 6, 8</td>
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<tr>
<td>Statistics Asst. #6: Two-way ANOVA, Between-Within</td>
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<tr>
<td>Human subjects protection certification</td>
<td>1</td>
<td>12/5</td>
<td>6</td>
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<tr>
<td>Term paper</td>
<td>35</td>
<td>12/5</td>
<td>1, 2, 3, 6, 8, 9</td>
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<tr>
<td>Class attendance, participation &amp; contribution</td>
<td>5</td>
<td>All Term</td>
<td>1, 2, 5, 6, 7, 8, 9, 10</td>
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<tr>
<td>Research Proposal Presentation</td>
<td>5</td>
<td>12/7, 12/13</td>
<td>1, 2, 3, 6, 8, 9, 10</td>
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Grading key for class attendance, discussion participation & contribution grade. Attendance: 1 missed class = 0 points off, for each class missed after the first class = 1 point off. Lack of meaningful participation and contribution to discussion in classes attended will also result in loss of points.

Reports are due at the start of class on the due date announced in class or in the course schedule. Reports submitted after the deadline will lose 10% of the maximum potential score per day, including weekends. Extensions and incomplete grades will be allowed only for medical reasons or very significant personal reasons. Reports must be typed, include page numbers, and be stapled. It is strongly suggested you read the “TERM PAPER SUGGESTIONS” web page, accessed from a link on Dr. Chalmers’ home page.

Many assignments are done as groups to facilitate cooperative learning, which maximizes student learning. If you find that a partner in a group is not contributing to the team, then discuss this problem first with the partner, then, if needed, with Dr. Chalmers as soon as possible so that options can be explored.

The class periods will be organized as follows: 3:00 - 4:15, regular course content; 5 minute break; 4:20 - 4:50, extra material needed by students. e.g., Review of prerequisite statistics course material, as needed. Help for students on design of their individual research project proposals.

Students need a good understanding of the APA style of publications (text and reference style) to complete this class, or an alternative citation style. If they do not have this knowledge already they can teach themselves using the APA style guide, or style guide for an alternative system.

©KINESIOLOGY GRADUATE PROGRAM STUDENT LEARNING OBJECTIVES:
Graduates of the program will be positioned to contribute to their profession and be life-long learners in a...
diverse society by demonstrating:
1. skilled written and oral communication
2. critical and creative thinking
3. effective information acquisition and utilization
4. content-specific technology use
5. collaboration and collegiality
6. professionalism and ethical behavior
7. the capability of synthesizing and applying information across the field of Kinesiology
8. the ability to apply appropriate methods to develop and investigate research questions
9. mastery of content knowledge in the core and applicable specialization areas of Kinesiology
10. mastery of content application in the core and applicable specialization areas of Kinesiology

This syllabus is subject to change. Changes, if any, will be announced in class. Students will be held responsible for all changes.

Additional Meeting Time: Dr. Chalmers will meet with students after class on a regular basis, as requested by the student, and/or scheduled by Dr. Chalmers to discuss student progress on individual aspects of the course content such as: selection of a topic for the research paper in this class, literature research for the research paper, drafts of the research paper, appropriate statistical design for the project proposed in the paper.

Grading Key

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<tr>
<th>Grade</th>
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<td>A-</td>
<td>90 - 92%</td>
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<td>B+</td>
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Test Make-Up Policy
1. If a student misses a test, they cannot make up the exam unless prior approval has been granted, except under extenuating situations. If you have a medical excuse prior to the test, it must be given to the instructor prior to the test.
2. If a student requests a change in the test date, arrangements must be made at least one week in advance. The student should expect to take the test earlier rather than later.
3. All test arrangements must be made by direct contact, not through a telephone message left for the instructor.

Retention of student submitted work
Dr. Chalmers occasionally saves a copy of work submitted by a student so it can be included in a collection of course material that is viewed by other WWU faculty members for course review purposes, or by future students to understand assignment requirements. In this case, the student's name is removed from the material. If you do not wish to have your submitted work possibly saved in this manner, please notify your instructor by the end of the second week of classes.

Additional Comments Please feel encouraged and welcome to come and speak with me about any questions or concerns that you may have regarding the course. I have regularly scheduled office hours. If you are unable to see me during my regular office hours talk to me in class or through email, and we can set up an appointment.

Reasonable Accommodation Policy: Reasonable accommodation for persons with documented disabilities should be established within the first week of class and arranged through Disability Resources for Students: telephone 650-3083; email drs@wwu.edu; and on the web at Disability Resources (http://www.wwu.edu/depts/drs/)

ACADEMIC INTEGRITY:
For students, academic integrity means challenging yourself, striving for excellence, taking risks and learning from your mistakes, doing your own work, and giving credit whenever you use the work of others. It boils down to caring about your schoolwork and always being honest in carrying it out.
I begin with the assumption that you come to Western and this class with integrity. However, academic integrity and honesty can be challenging due to such things as ignorance, confusion, stress, bad advice, and bad choices. So to help you keep your integrity and good reputation intact, I have resources for you (meaning, by the way, that ignorance will not be an excuse):

- WWU's Integrity Website www.wwu.edu/integrity. It provides all the information you need, including why integrity is important, how to promote it, as well as types of academic dishonesty and how to avoid them, particularly plagiarism. It also includes WWU's policy and procedures on academic honesty (appendix D of the WWU Catalog).
- See me, see me, see me if you have any concerns or questions about academic integrity regarding yourself or your classmates. An ounce of prevention is worth a pound of cure, especially where penalties and one's reputation are at stake. I am here to help.

**Student Services:** Western encourages students to seek assistance and support at the onset of an illness, difficulty, or crisis.

- In the case of a medical concern or question, please contact the Health Center: 650-3400 or visit Student Health (http://www.wwu.edu/chw/student_health/).
- In the case of an emotional or psychological concern or question, please contact the Counseling Center: 650-3400 or visit Counseling Center (http://www.wwu.edu/chw/).
- In the case of a health and safety concern, please contact the University Police: 650-3555 or visit University Police (http://www.wwu.edu/ps/police/index.shtml).
- In the case of a family or personal crisis or emergency, please contact the Dean of Students: 650-3450 or visit Dean of Students(http://wp.wwu.edu/students/).

**Equal Opportunity:** Mutual respect for everyone is key to ensuring a safe environment that promotes learning for all students. Western is committed to an environment free of discrimination and harassment. Federal and State laws, as well as University policies, protect faculty, staff, and students against discrimination based on the following legally protected characteristics: Race, Color, Creed, Religion, National Origin, Sex, (including pregnancy and parenting status), Age, Disability, Marital Status, Sexual Orientation, Gender Identity and Expression, Genetic Information and Veteran Status (See Equal Opportunity and Western’s Policies on Providing Equal Opportunity and Nondiscrimination and Preventing Sexual Harassment). If you feel you have experienced inappropriate behavior based on one of the categories above, please contact the Equal Opportunity Office, (360) 650-3307 (http://www.wwu.edu/eoo/)

**This course contributes to the Kinesiology and Physical Education Program Student Learning Outcomes:** Upon graduation, majors will be able to:

1. Be positioned to contribute to their profession and be life-long learners in a diverse society by demonstrating:
   A. skilled written and oral communication
   B. critical and creative thinking
   C. effective information acquisition and utilization
   D. content-specific technology use
   E. collaboration and collegiality
   F. professionalism

2. Demonstrate mastery of content in the core and applicable specialization areas of Kinesiology.

3. Demonstrate mastery of content application in the core and applicable specialization areas of Kinesiology.

### KIN 506 COURSE SCHEDULE FALL 2017

<table>
<thead>
<tr>
<th>Day</th>
<th>Date</th>
<th>Content</th>
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| Thurs | 9/28 | Intro to course, course outline  
Discuss Human subjects protection certification assignment  
Unit 1 - intro to research |
| Tues | 10/3 | Unit 2 - Developing a problem & using the literature SLS assignment-explanation and  
 demo of library database use  
Discussion of optional SLS & APA style lectures in KIN 301. |

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<table>
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| 10/5     | Discuss problems in SLS assignment  
Unit 2 - Developing a problem & using the literature  
Unit 3 - Presenting the research problem                                                                                                      |
| 10/10    | Optional: Each student describes topic direction and roadblocks  
Unit 4 - Planning & reporting your methods  
Unit 10 – Measurements (part of Chalmers KIN 306 unit 5)                                                                                   |
| 10/12    | Unit 11 - Experimental Design                                                                                            |
| 10/17    | Unit 11 - Experimental Design                                                                                                  |
| 10/19    | **SLS asst. due**  
Discuss term paper assignment  
Discuss term paper submission requirements (1st year versus 2nd year students).  
Unit 5 - Advanced correlation & regression topics  
Unit 6 - Comparisons of two groups: effect size, power, sample size                                                                                 |
| 10/24    | Unit 6 - Comparisons of two groups: effect size, power, sample size                                                                                                                   |
| 10/26    | Return SLS asst.  
Unit 6 - Comparisons of two groups: effect size, power, sample size  
Unit 7 - One Way ANOVA                                                                                                                  |
| 10/31    | In computer lab **Arntzen Hall 005: Excel lesson.**  
Discuss statistics assignments 1, 2 & 3.                                                                                                    |
| 11/2     | Go through sample thesis that students bring. # Ind Vars & # levels, # DVars = project complexity  
Unit 7 – One Way ANOVA  
Unit 8 - Two Way ANOVA  
Unit 9 – MANOVA  
**By the end of this week all students must have met Dr. Chalmers after the class to discuss their outline for their literature review.**                                                                 |
| 11/7     | In computer lab **Arntzen Hall 005: SPSS lesson.**  
Demonstration of one-way ANOVA, two-way ANOVA  
Discuss statistics assignments 4, 5 & 6.                                                                                                   |
| 11/9     | In computer lab **Arntzen Hall 005:SPSS Lab time.**  
Statistics assignments 2 due.                                                                                                              |
| 11/14    | Janai Symons, WWU Research Compliance Officer. Conducting responsible research.  
Statistics assignments 3 due.  
Statistics assignments 4 due.                                                                                                              |
| 11/16    | Discuss:  
• oral presentations.  
• How to do post-hoc test, if needed, in SPSS assignments  
• Sample student project: 2x2 mixed ANOVA: Discuss design + Stats + limitations to state  
• Review paper requirements  
• Review talk requirements (10 ± 2 min)  
Optional: Discuss examples of application of experimental design and selection of appropriate statistical analysis to each student’s project, and limitations.  
In computer lab **Arntzen Hall 005:SPSS Lab time.**                                                                                          |
| 11/21    | In computer lab **Arntzen Hall 005: SPSS open lab time.**  
Statistics assignments 5 due.                                                                                                               |
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<tr>
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<tbody>
<tr>
<td>Thurs 11/23</td>
<td>Thanksgiving Holiday</td>
</tr>
<tr>
<td>Tues 11/28</td>
<td>In computer lab Arntzen Hall 005: SPSS open lab time. Statistics assignments 6 due.</td>
</tr>
<tr>
<td>Thurs 11/30</td>
<td>In computer lab Arntzen Hall 005: SPSS open lab time</td>
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<td>Tues 12/5</td>
<td>Term paper asst due</td>
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<td>Human subjects protection certification assignment due</td>
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<td>Student Presentations</td>
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<td>Thurs 12/7</td>
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<td>Exam week 12/13, 1-3 pm</td>
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