**The University of Texas at Arlington**

**College of Education and Health Professions**

**Department of Educational Leadership and Policy Studies**

**EDAD 6310 | Statistical Methods | Spring 2014**

**Preston Hall 200; Thursday 5:30 – 8:20 pm**

**Instructor Information**

Instructor: Yi (Leaf) Zhang, Ph.D. Phone: 817-272-9221

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Office Hours: Tuesday, Wednesday, Thursday, 2:00 to 5:00 pm or by appointment

**Textbooks**

Required:

* Bluman, Allan G. (2011). Elementary Statistics: A Step by Step Approach (8th Edition). McGraw Hill.
* Supplemental readings are provided by the instructor via Blackboard

Suggested:

* American Psychological Association. (2010). *Publication manual of the American Psychological Association* (6th Edition). Washington, D.C.: American Psychological Association.

**Course Description**

The course examines introductory statistical methods and their implications for educational research and evaluation. Appropriate computer applications will be integrated into the course.

**Learning Outcomes**

By the end of the course, students will be able to:

* Define, and use correctly, common statistical terms and concepts.
* Create, edit data files, and conduct common statistical analyses.
* Correctly create and interpret various graphical representations of data.
* Correctly compute and interpret summary descriptive statistics, including measures of central tendency, variability, use of percentiles and other standard scores.
* Correctly apply sampling methods to select appropriate samples for various purposes.
* Correctly compute and interpret confidence intervals.
* Select, compute, and interpret the appropriate parametric or nonparametric statistical tests of hypotheses concerning a single mean, or concerning two means from independent or related samples, including tests of assumptions, as needed.
* Select, compute, and interpret the appropriate correlation coefficient for a set of data, including tests of assumptions, as needed.
* Select, compute, and interpret the appropriate statistical tests for hypotheses concerning frequency data.

**Attendance and Class Participation**

Attendance and punctuality are basic requirements for an effective class and learning community. You are expected to be in class on time except when you have a documented emergency. If you do miss class, you are responsible for:

* All content covered
* Completing all work assigned
* Contacting my office and letting me know prior to the class meeting
* Contacting a classmate and arranging for them to pick up an extra copy of any handouts that were distributed
* Arranging to turn any work in that day
* Class participation points will be deducted

**Drop Policy**

Students may drop or swap (adding and dropping a class concurrently) classes through self-service in MyMav from the beginning of the registration period through the late registration period. After the late registration period, students must see their academic advisor to drop a class or withdraw. Undeclared students must see an advisor in the University Advising Center. Drops can continue through a point two-thirds of the way through the term or session. It is the student's responsibility to officially withdraw if they do not plan to attend after registering. **Students will not be automatically dropped for non-attendance**. Repayment of certain types of financial aid administered through the University may be required as the result of dropping classes or withdrawing. For more information, contact the Office of Financial Aid and Scholarships (<http://wweb.uta.edu/ses/fao>).

**Academic Integrity**

All students enrolled in this course are expected to adhere to the UT Arlington Honor Code:

*I pledge, on my honor, to uphold UT Arlington’s tradition of academic integrity, a tradition that values hard work and honest effort in the pursuit of academic excellence.*

*I promise that I will submit only work that I personally create or contribute to group collaborations, and I will appropriately reference any work from other sources. I will follow the highest standards of integrity and uphold the spirit of the Honor Code.*

Instructors may employ the Honor Code as they see fit in their courses, including (but not limited to) having students acknowledge the honor code as part of an examination or requiring students to incorporate the honor code into any work submitted. Per UT System *Regents’ Rule* 50101, §2.2, suspected violations of university’s standards for academic integrity (including the Honor Code) will be referred to the Office of Student Conduct. Violators will be disciplined in accordance with University policy, which may result in the student’s suspension or expulsion from the University.

**Blackboard**

The classroom management system, Blackboard, will be an important medium used to structure and facilitate learning in this course. Blackboard serves as a common space where class information, learning materials, and assignments can be shared between the instructor and students. For most class assignments, students will be asked to post their work on Blackboard in a format that is accessible to their classmates, as peer-to-peer learning will be an important aspect of this graduate course. If you have any technical difficulties or questions regarding Blackboard, help is available 24/7 by contacting [cdesupport@uta.edu](mailto:cdesupport@uta.edu).

**Electronic Communication**

UT Arlington has adopted MavMail as its official means to communicate with students about important deadlines and events, as well as to transact university-related business regarding financial aid, tuition, grades, graduation, etc. All students are assigned a MavMail account and are responsible for checking the inbox regularly. There is no additional charge to students for using this account, which remains active even after graduation. Information about activating and using MavMail is available at <http://www.uta.edu/oit/cs/email/mavmail.php>.

The MavMail should be used for all electronic communication with the instructor. Please allow a 48 hour response time to e-mail. Do **NOT** wait until one day or several hours before an assignment is due to e-mail the instructor with a question about the assignment and expect an immediate response.

**Written Communication and Assignment Submission**

**All written assignments must conform to the style and reference formats specified in the *Publications Manual of the APA* and must be word processed or typed. Assignments will be graded on content as well as on the technical quality of the writing and presentation. All written assignments should be carefully proofread for spelling, grammar, and syntax. Assignments containing multiple errors may be returned, ungraded, for revision and resubmission at a lower grade. It is expected that all written work will conform to accepted graduate level standards.**

All written assignments need to be presented as attachments through the Blackboard system and NOT as attachments through an email. When submitted, they need to be saved in a MS Word document format (either .doc or .docx).

All of the assignments are graduate papers. Please follow APA style (6th edition) for formatting, citing, and reference guidelines.

**Late Assignments**

Late work will not be accepted without prior approval from the instructor. Late assignments will be graded 20% lower. No points will be awarded for work not completed. No assignment will be accepted after May 1st, 2014.

**Course Assignments and Requirements (Total: 800 points)**

1. ***Participation (10 points at each face-to-face section; 10 sections; Total: 100 points)***

As a graduate level class, this course is designed to be highly interactive and dependent upon your level of preparation. Most class meetings will consist of discussions, instructor and student presentations, and individual and group exercises related to individual session objectives. It is expected that you be prepared, having read all course materials in advance of our class meetings, and that you participate regularly in class discussions. Each class has been designed to maximize the use of your time together, while blending a variety of learning activities that appeal to multiple learning styles. This is also intended to make the course interactive, purposeful and practical.

1. ***Blackboard Discussion Forum (10 points for each session; 10 sessions; Total: 100 points)***

Students are required to provide feedback on questions for each session and post comments to questions posted within the lesson. The questions will be listed on the Blackboard discussion forum. Students are encouraged to use this forum as an additional opportunity to continue the class discussion, to ask questions, and to give feedback to their classmates.

1. ***Journal Article Discussion (100 points)***

Students will be divided into small groups (2-3 students each group) and each group will work together to identify a published peer-reviewed journal article employing a certain statistical method discussed in our class. The article should be posted on Blackboard the Sunday prior to the scheduled discussion. The specific topics and the order can be found on the Tentative Schedule on page 6. The discussion should be 12-15 minutes. Each group should provide their classmates with a one-page single-spaced handout (See Appendix A for the discussion outline).

1. ***Group Project (50 points each group project; 5 projects; Total: 250 points)***

Students will be divided into small groups (2-3 students each group) and they should work with a new group for each project. Each group will work together to answer a series of questions (either given by the instructor or developed by the group) that are relevant to class topics. Data set will be provided to the students.

1. ***Quizzes (closed book) (20 points each quiz; 5 quizzes; Total: 100 points)***

The quizzes are developed for the topics of the class. Each quiz may consist of multiple choice, true/false, and open-ended questions.

1. ***Final Examination (open book; 150 points)***

Students will be provided with a data set and three questions. Students will be given a week to work on the final examination. Students are expected to answer the questions by using appropriate statistical methods, presenting the results, and interpreting the results. The final report should be formatted in APA style.

**Grading Scale**

|  |  |  |
| --- | --- | --- |
| **Grade** | **Ranges** | **Quality of Work** |
| A | 90-100% | Exemplary; clearly exceeds course standards |
| B | 80-89% | Good; adequately meets the course standards |
| C | 70-79% | Fair; barely meets the course standards |
| F | 69 or lower | Failing; does not meet any course standards |

**Tentative Schedule of Class Activities, Readings and Assignments**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Week** | **Date** | **Topics & Activities** | **Reading** | **Assignment Due**  **(Sunday, 11:59pm)** |
| **1** | **01/16** | Orientation; Quantitative research; Basic terminology; Scales of measurement, SPSS introduction; Quantitative data and research sources | Chapter 1 | Blackboard discussion 1 – Due 1/19 |
| **2** | **01/23** | Organizing the data; Descriptive analysis; Frequency distribution; Central tendencies and variability;  *Journal article discussion 1– descriptive analysis* | Chapter 2 & 3 | Blackboard discussion 2 – Due 1/26 |
| **3** | **01/30** | *SPSS Exercise* |  | Group project 1 & Quiz 1 - Due 2/2 |
| **4** | **02/06** | Probability; Sampling distribution; Normal distribution; Confidence intervals | Chapter 4, 5, 6, 7 | Blackboard discussion 3 - Due 2/9 |
| **5** | **02/13** | *SPSS Exercise* |  | Group project 2 & Quiz 2 - Due 2/16 |
| **6** | **02/20** | Hypothesis testing; Testing the difference between two means, two proportions, and two variances – part I  *Journal article discussion 2– difference between two means* | Chapter 8 & 9 | Blackboard discussion 4 – Due 2/23 |
| **7** | **02/27** | Hypothesis testing; Testing the difference between two means, two proportions, and two variances – part II  *Journal article discussion 3 – difference between two proportions* | Chapter 8 & 9 | Blackboard discussion 5 – Due 3/2 |
| **8** | **03/06** | *SPSS Exercise* |  | Group project 3 & Quiz 3 - Due 3/9 |
| **9** | **03/13** | **Spring Break – No Class** |  |  |
| **10** | **03/20** | Hypothesis testing; One-way ANOVA; post hoc test  *Journal article discussion 4– one-way ANOVA* | Chapter 12 | Blackboard discussion 6 – Due 3/23 |
| **11** | **03/27** | Correlation & Measures of association  *Journal article discussion 5– Correlation* | Chapter 10 | Blackboard discussion 7 – Due 3/30 |
| **12** | **04/03** | *SPSS Exercise* |  | Group project 4 & Quiz 4 - Due 4/6 |
| **13** | **04/10** | Simple regression & Multiple regression  *Journal article discussion 6– simple regression*  *Journal article discussion 7- multiple regression* | Chapter 10 | Blackboard discussion 8 – Due 4/13 |
| **14** | **04/17** | *SPSS Exercise* |  | Group project 5 & Quiz 5 - Due 4/20 |
| **15** | **04/24** | Chi-Square goodness of fit; Chi-Square test of independence; *SPSS Exercise* | Chapter 11 | Blackboard discussion 9 – Due 4/27 |
| **16** | **05/01** | Review of the class; Q & A |  | Blackboard discussion 10 – Due 5/4 |
| **17** | **05/08** | **Final Exam Week – No Class** |  | **Final Exam – Due 5/8** |

**Student Support Services Available**

UT Arlington provides a variety of resources and programs designed to help students develop academic skills, deal with personal situations, and better understand concepts and information related to their courses. Resources include tutoring, major-based learning centers, developmental education, advising and mentoring, personal counseling, and federally funded programs. For individualized referrals, students may visit the reception desk at University College (Ransom Hall), call the Maverick Resource Hotline at 817-272-6107, send a message to [resources@uta.edu](mailto:resources@uta.edu), or view the information at [www.uta.edu/resources](http://www.uta.edu/resources).

**Student Feedback Survey**

At the end of each term, students enrolled in classes categorized as “lecture,” “seminar,” or “laboratory” shall be directed to complete an online Student Feedback Survey (SFS). Instructions on how to access the SFS for this course will be sent directly to each student through MavMail approximately 10 days before the end of the term. Each student’s feedback enters the SFS database anonymously and is aggregated with that of other students enrolled in the course. UT Arlington’s effort to solicit, gather, tabulate, and publish student feedback is required by state law; students are strongly urged to participate. For more information, visit <http://www.uta.edu/sfs>.

**Final Review Week**

A period of five class days prior to the first day of final examinations in the long sessions shall be designated as Final Review Week. The purpose of this week is to allow students sufficient time to prepare for final examinations. During this week, there shall be no scheduled activities such as required field trips or performances; and no instructor shall assign any themes, research problems or exercises of similar scope that have a completion date during or following this week *unless specified in the class syllabus*. During Final Review Week, an instructor shall not give any examinations constituting 10% or more of the final grade, except makeup tests and laboratory examinations. In addition, no instructor shall give any portion of the final examination during Final Review Week. During this week, classes are held as scheduled. In addition, instructors are not required to limit content to topics that have been previously covered; they may introduce new concepts as appropriate.

**Emergency Exit Procedures**

Should we experience an emergency event that requires us to vacate the building, students should exit the room and move toward the nearest exit, which is located [insert a description of the nearest exit/emergency exit]. When exiting the building during an emergency, one should never take an elevator but should use the stairwells. Faculty members and instructional staff will assist students in selecting the safest route for evacuation and will make arrangements to assist handicapped individuals.

**This syllabus is subject to change as needed.**

**Any changes to the syllabus will be announced in class**

**Appendix A – Discussion Outline**

1. Basic information of the article (What is the topic? What is the background of the research?)
2. Purpose of the research (Is it clearly identified?)
3. Research questions/ hypotheses (Are they clearly identified? Do they reflect the topic, the purpose of the research, and the information presented in literature review?)
4. Research design (Is the research design clearly identified? Are the methods appropriately used to answer the research questions/to test the hypotheses? Is the statistical analysis (for example, multiple regression) appropriate? How was it used in the research?)
5. Results (Are the results accurate? How are they presented? Are they clear?)
6. What did you learn from the article (dos and donts)?
7. Develop questions for the class