

Syllabus



Course Information: EDTECH 651: Introduction to Statistics for Educational Technology
Fall 2018, Section 4201

This is an online course supported by the Moodle learning management system. The login page is located at: <https://edtech.mrooms.org/course/view.php?id=1334>.

Course Instructor:

Dr. Dazhi Yang

Boise State University

Office Phone: 208-426-3212

Email: dazhiyang@boisestate.edu (Please be aware that there is **NO "u"** in my email address.

Although you can still send to the email address with U but I can't access it 😊)

Websites:

http://works.bepress.com/dazhi_yang/

Office Hours (Mountain Time):

Tuesdays 1:00 pm- 2:00 pm

Wednesdays 1:00 pm - 2:00 pm

Virtual Office Hours: Feel free to IM me when I'm online anytime through Moodle

If you have questions or need help please contact your instructor by phone, email, or by posting a note on the class discussion board. I will do my best to respond within 24 hours on weekdays.

Weekend messages will be answered by the end of the day on Mondays. You can also get help regarding Moodle from the Moodle Support Page

at <https://edtech.mrooms.org/mod/page/view.php?id=625>

Course Description: Common statistical concepts and their applications in educational technology. Topics covered will include: measures of central tendency and variability, one and two sample tests, confidence intervals and chi-square. Introduction to bivariate correlation and analysis of variance.

Previous Knowledge: Fundamental algebraic skills, such as slope and equations of lines. Fundamental arithmetic knowledge, such as fractions, negative numbers, and percents. Knowledge of algebraic expressions and linear equations.

Course Objectives/Goals

1. Input, output, and organize data in SPSS;
2. Summarize and describe data according to educational technology research questions;
3. Understand common statistical concepts, such as hypothesis testing, critical values and p-values, confidence interval, etc., in educational research;
4. Identify and articulate differences between/among common statistical analysis methods;
5. Perform and describe descriptive analysis using SPSS in educational technology research;
6. Perform and interpret inferential analysis using SPSS in educational technology research;
7. Critique and evaluate common statistical analysis methods in educational technology literature;

8. Apply the educational research design process (forming research questions, selecting research methods, collecting and analyzing data) to answer research question(s).

Required Textbook

Levin, J., & Fox, J. A. (2011). Elementary Statistics in Social Research: The Essentials (3rd ed).
 Publisher: Allyn & Bacon
 ISBN-13:978- 0-205-63800-0

SPSS, a computer program used for statistical analysis, is also required for this class. You can use the most updated version. However, older versions can still be used in this class. Students and educators are eligible for discounts for certain software. Two places you can purchase software at a discount are: BSU Bookstore and Academic Superstore. You can check out the **one-year online license for SPSS** from this website

<<http://studentdiscounts.com/spss.aspx?gclid=CPL9pY6vqq0CFYJdtgodQWJZKA>>. (If you are familiar with and have access to SAS, you can use SAS for this course. But the tutorials in this class will only be on SPSS.)

Recommended Book

Pallant, J. (2013). SPSS survival manual: A step by step guide to data analysis using the SPSS program (5th ed). (<http://www.allenandunwin.com/spss/default.html>)

The instructor is not responsible for any text or software that is not obtained in enough time to complete the assignments.

Schedule and Topics (Tentative)

Topics	Tasks
Module 1: Welcome and Orientation to the Course	Orientation and introduction to the course
Module 2: Measurement Issues and Organization of Data; Introduction and Overview of SPSS	Chapters 1 & 2; Input, output, organization of data in SPSS
Module 3: Initial Discovery with Data: Central Tendency and Variability	Chapter 3 & 4; SPSS
Module 4: One and Two Samples Tests	Chapter 5, 6 & 7; SPSS
Module 5: The chi-square Test	Chapter 6 & 9; SPSS
Module 6: Introduction to Bivariate Correlation & Analysis of Variance	Chapter 8 & 10; SPSS
Thanksgiving Holiday	No assignment
Module 7: Reflecting on Your Learning	Chapter 13

Module Assignments and Total Estimated Points Allocation (subject to change)

	Module 1	Module 2	Module 3	Module 4	Module 5	Module 6	Module 7	Subtotal
Module 1 Activities (First week participation/Scavenge Hunt Activity)	30	--	--	--	--	--	--	30
Discussion Postings/Overall Course Participation	35							35
Module Exercise Assignments	--	50+15	50	50	50	50	--	265

Mini Projects	--	--	100	--	100	--	--	200
Final Project/Presentation	--	--	--	--	--	--	100	100
Case Studies	--	--	--	100	--	100	--	200
Grand Total								830

Detailed info about assignments, projects and case studies will be available in specific modules.

Equipment

This is an online course requiring a computer with speakers and an Internet connection. Minimum hardware requirements for the EDTECH online courses may be located at: <https://edtech.boisestate.edu/admissions/hardware-and-software-requirements/>

Software Requirements: Current software requirements for the EDTECH program: <https://edtech.boisestate.edu/admissions/hardware-and-software-requirements/>
For some software, an academic discount is available for students and teachers with proof of eligibility. Here are two places where you can obtain the academic (lower priced) versions of the software:

Boise State Bookstore: <http://www.boisestatebooks.com/> (Click Technology/Software)

Academic Superstore: <http://www.academicssuperstore.com/> (Search for titles)

Antivirus Software: Please make sure to have up to date antivirus software installed and running on your computer.

Popup Blocker: This is highly recommended. Google has one built into their free toolbar if you want to try it: http://toolbar.google.com/T4/index_pack.html

Free Software: Please make sure that the following are installed and up to date on your computer.

Adobe Reader: <http://www.adobe.com/products/acrobat/readstep2.html>

Flash Player: <http://www.adobe.com/products/flashplayer/>

QuickTime Player: <https://support.apple.com/downloads/quicktime>

Firefox Web Browser: <http://www.mozilla.com/en-US/firefox/>

Internet Connection: Of course, an Internet connection is required to participate in this online course. If you have a high speed connection it is preferable to dial-up access. If you only have dial-up access you can still get by, but patience is a virtue when waiting for files to download.

Course Policies

Time Management: An online course can take a considerable amount of time. For this reason, I would strongly suggest beginning each assignment early. Work on it regularly over the week rather than waiting until the last day or two. This will allow you to have the chance to work out problems or get help if needed.

Participation: Depending on the class activities, you are responsible for completing weekly assignments, participating in discussion groups, and checking in to the course site on a consistent basis.

Assignments: You will always be given explicit instructions on where to send your assignments. Assignments are usually due on Tuesdays. The exact dates will always be found in the activities.

Advanced Copies of Assignments: Assignments might not be handed out in advance. Often times a lesson can be changed prior to posting. This policy is to ensure that you always have the most accurate and up-to-date information available to you. I try to post our assignments early, but this is not a guarantee.

Late Assignments: Sometimes situations occur that prevent us from working on our assignments on time especially with many of your busy schedules. During the course, every student will be

permitted one late assignment without losing any points; however, the assignment cannot be turned in more than one week late. Any other assignments that are late past this first initial late assignment will have one letter grade per day deducted from it. During the last two weeks of class, all assignments must be turned in on time and cannot be submitted late.

The instructor is not responsible for any text or software that is not obtained in enough time to complete the assignments.

Backing Up Your Files: You will be offered several ways to save your work online. However, you should always save your work on another storage device on your own computer. I cannot stress this enough.

Faculty Initiated Drop: Please be advised that if you do not "attend" class at least once during the first week, I will drop you from class. Since this is an online course, this requirement means that you MUST be present in our Moodle course site during the first week and participate in the introductions.

In Process (IP): Please be advised that I strictly follow the rules for in process (incomplete). In order for me to give you an IP in this course, the following two criteria MUST be met:

Your work has been satisfactory up to the last three weeks of the semester.

Extenuating circumstances make it impossible for you to complete the course before the end of the semester.

In order to receive an IP, we must create a contract stipulating the work you must do and the time in which it must be completed for you to receive a grade in the class. The contract time may not exceed one year. If no grade other than IP has been assigned one year after the original IP, the grade of 'F' will automatically be assigned. The grade of 'F' may not be changed without the approval of the University Appeals Committee. You may not remove the IP from your transcript by re-enrolling in the class during another semester. A grade of IP is excluded from GPA calculations until you receive a final grade in the course. If I assign a grade of IP you will receive an email notification that you have "Registrar To Do Items" on BroncoWeb.

Student Code of Conduct: It is expected that students in this class will create original works for each assignment. We will follow the BSU Student Code of Conduct. In the event of academic dishonesty a complaint is filed with the BSU Student Conduct Office with supporting documentation. This complaint remains on file and actions may be taken against the student (e.g., loss of credit, grade reduction, expulsion, etc.).

We will also observe U.S. copyright laws in this course. Several great links to copyright information are available on the BSU Albertson's Library site at: <https://library.boisestate.edu/researchsupport/copyright/>

In addition to the above, please respect the following guidelines:

1. Please submit original work for each project. Projects that were created for other classes may not be submitted for credit in EDTECH 651. Each project may only be submitted for credit one time by the person who created it. The BSU Student Code of Conduct states: "Academic dishonesty also includes submitting substantial portions of the same academic course work to more than one course for credit without prior permission of the instructor(s)."

2. All project text should be original text written by the student who is creating the project. The exception to this is the use of small amounts of quoted material that is properly cited. Copying and pasting from other Web sites or projects (including the instructor's examples) is not allowed.

3. Images and sound clips used in projects should be original, or used with permission of the owner, or come from the public domain. Please check terms of use on sites containing these items.

4. Please cite the source(s) for materials that are obtained for your projects unless they are created by you. If permission is granted for use of copyrighted materials please post a statement explaining that near those materials.

I may use some plagiarism detection utilities to test random assignments. Contact me if you have any questions regarding this issue. Thank you for abiding by the Course Policies.

Grading (Points Allocation)

Each assignment will be graded based on given criteria and a rubric each week as outlined in the Assignment. You can check your progress in Moodle by clicking the Grades link on the left-hand navigation bar. Progress is updated as assignments are evaluated throughout the semester.

Grades in this course will consist of three major components:

1. Preparation/participation
2. Mini projects/final project/case studies
3. Module exercise assignments

Point values will be specified when the assignments are posted. I reserve the right to adjust these percentages, either collectively or individually, as necessary. Grade Scale: Based on percentage of total points attained:

- A+ 99-100% (for example: only obtained points are equal or more than 821.7 can be awarded A+)
- A 93-98% (> 771.9)
- A- 90-92% (>747)
- B+ 88-89% (>730.4)
- B 84-87%
- B- 80-83%
- C+ 78-79%
- C 74-77%
- C- 70-73%
- D 65-69%
- F < 65%

If the cost of this course is being reimbursed by your district or school, please review the policies regarding the minimum grade required for a complete reimbursement. It is not the responsibility of the instructor to assure a grade that meets those requirements.

AECT Standards Addressed

Standard

Assignment

Standard 2: DEVELOPMENT

1. Integrated Technologies

Integrated technologies are ways to produce and deliver materials which encompass several forms of media under the control of a computer

Mini Projects / Case Study

2.0.5 Apply appropriate evaluation strategies and techniques for assessing effectiveness of instructional and professional products.

Standard 3: UTILIZATION

3.2 Diffusion of Innovations

Diffusion of innovations is the process of communicating through planned strategies for the purpose of gaining adoption.

Mini Projects / Case Study

Standard 5: EVALUATION

5.3 Formative and Summative Evaluation

Formative evaluation involves gathering information on adequacy and using this information as a basis for further development. Summative evaluation involves gathering information on adequacy and using this information to make decisions about utilization

Mini Projects / Case
Study

Source: AECT Accreditation Standards for Programs in Educational Communications and Instructional Technology (ECIT) <http://www.aect.org/standards/initstand.html>

Modification of the Syllabus and Schedule

I reserve the right to modify the syllabus and schedule at any time. Notice of any change will be emailed and posted as an announcement.

© 2014 Dazhi Yang, Ph.D.

Last modified: Monday, August 13, 2018, 11:04 PM