

CPSE and IP&T 651 - Statistics I

Fall 2016

Friday 1:00-3:50pm,

WHO WE ARE

Instructors:

Lane Fischer, PhD – CPSE Faculty; lane_fischer@byu.edu, 340-E MCKB, 801-422-8293

Ken Plummer, PhD – CTL Consultant; ken_plummer@byu.edu, 3820-A HBLL, 801-422-6187

Contact us to set up an appointment.

WHERE WE ARE GOING

Course Purpose:

By the end of the course you will be able to frame instructional-related questions using statistical concepts, select and run statistical methods and interpret the results.

Course Outcomes:

This purpose is broken down into the following subcomponents or course outcomes:

You will -

1. explain in your own words the concepts that underlie basic descriptive and inferential statistics for both parametric and non-parametric data sets.
2. explain in your own words hypothesis testing theory and probability distributions.
3. select appropriate statistical methods to answer basic research problems.
4. perform analyses using statistical programs.
5. interpret and report statistical results in APA format.
6. critique the statistical methods used and reported in research articles.

HOW WE WILL KNOW WHEN WE GET THERE

You will complete **two projects** and a **comprehensive final exam**.

- **Final Exam** – You will be given up to three hours to answer a random selection of questions in which will select the analysis, run it, and either choose or provide the correct interpretation using a basic format. Additionally, you will read a series of journal article abstracts and select the methods that could be used to answer the research questions stated therein (*Outcomes 1, 2, 3, 4, 5, 6*)

HOW WE WILL KNOW WE ARE ON THE RIGHT TRACK

You will complete –

1. **Ten homework assignments** through BYU Learning Suite Exams
2. **At minimum ten in-class quizzes** through BYU Learning Suite Exams

that will help you and us monitor your progress toward the course purpose. (*Outcomes 1, 2, 3, 4, 5*)

HOW WE WILL GET THERE

Type knowledge you will develop

This course will help you develop three schemas used in introductory statistics –

- *Conditional Schema* – knowing the interconnected conditions used to select statistical methods.
- *Procedural Schema* – knowing the interconnected . . .
 - o procedures used in identifying relevant conditions in method selection.
 - o steps for running statistical methods.
 - o equations that underlie basic statistical analysis.
- *Conceptual Schema* – knowing the interconnected concepts that provide the rationale for selecting statistical methods and interpreting the results

Your conditional schema will be developed during the first third of the semester. The last two thirds of the semester you will develop both your procedural schema (using SPSS) and your conceptual schema.

Homework assignments are problem-based and will help you reinforce what you learned in class. At the beginning of each class you will take a quiz assessing your knowledge of the material covered in the previous class and homework. It is critical that you are prepared for these quizzes. They will help you master the material in a way that will make it possible to integrate new information into your developing schema.

Decision-Based Learning Software

A software called *Decision-Based Learning Software* will be used as a guide as you complete your homework.

Your Role:

You should monitor your own learning constantly identifying gaps in understanding and using the resources of the course (software, instructors, other students, etc.) to fill those gaps. Note – just like learning a new language at first it can seem a little tedious but with practice patterns become clear and greater fluency achieved. You will work in what are called PODs (groups of two or three students) as you complete in-class learning activities.

Schedule – See Learning Suite Schedule. The schedule has all of the learning materials embedded therein.

Required Text / Software:

- Decision-based Learning Software – free and accessed through learning suite
- SPSS Statistical Software – this can be accessed in the lab during the week.

Grading Scale

Grade	Minimum %	Grade	Minimum %
A	93	C	73
A-	90	C-	70
B+	87	D+	67
B	83	D	63
B-	80	D-	60
C+	77	E	< 60

Assessment	Point Percentage
10 HW Assignments	33%
10+ Quizzes	50%
Final Exam	17%

UNIVERSITY POLICIES

Honor Code

In keeping with the principles of the BYU Honor Code, students are expected to be honest in all of their academic work. Academic honesty means, most fundamentally, that any work you present as your own must in fact be your own work and not that of another. Violations of this principle may result in a failing grade in the course and additional disciplinary action by the university. Students are also expected to adhere to the Dress and Grooming Standards. Adherence demonstrates respect for yourself and others and ensures an effective learning and working environment. It is the university's expectation, and every instructor's expectation in class, that each student will abide by all Honor Code standards. Please call the Honor Code Office at 422-2847 if you have questions about those standards.

Sexual Harassment

Title IX of the Education Amendments of 1972 prohibits sex discrimination against any participant in an educational program or activity that receives federal funds. The act is intended to eliminate sex discrimination in education and pertains to admissions, academic and athletic programs, and university-sponsored activities. Title IX also prohibits sexual harassment of students by university employees, other students, and visitors to campus. If you encounter sexual harassment or gender-based discrimination, please talk to your professor or contact one of the following: the Title IX Coordinator at 801-422-2130; the Honor Code Office at 801-422-2847; the Equal Employment Office at 801-422-5895; or Ethics Point at <http://www.ethicspoint.com>, or 1-888-238-1062 FREE (24-hours).

Student Disability

Brigham Young University is committed to providing a working and learning atmosphere that reasonably accommodates qualified persons with disabilities. If you have any disability which may impair your ability to complete this course successfully, please contact the University Accessibility Center (UAC), 2170 WSC or 422-2767. Reasonable academic accommodations are reviewed for all students who have qualified, documented disabilities. The UAC can also assess students for learning, attention, and emotional concerns. Services are coordinated with the student and instructor by the UAC. If you need assistance or if you feel you have been unlawfully discriminated against on the basis of disability, you may seek resolution through established grievance policy and procedures by contacting the Equal Employment Office at 422-5895, D-285 ASB.

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