Instructor/TA Info

Instructor Information

Name: Lane Fischer
Office Location: 340-E MCKB
Office Phone: 801-422-8293
Email: lane_fischer@byu.edu

Name: Kenneth Plummer
Office Location: 3820A HBLL
Office Phone: 801-422-6187
Email: ken_plummer@byu.edu

TA Information

Name: Steven Park
Office Location: 151 MORC
Office Phone: 801-422-0157
Email: 1606jollycircle@gmail.com

Name: Tonya Tripp
Office Location: 215 AKH
Office Phone: 801-422-8675
Email: tonya.tripp@byu.edu

Course Information

Learning Outcomes

Conceptual understanding of statistics
Gain a conceptual understanding of basic descriptive and inferential statistics for both parametric and non-parametric data sets.
Hypothesis Testing
Understand hypothesis testing theory and probability distributions.
Basic statistical methods
Select appropriate statistical methods to answer basic research problems.
Complete Statistical Analysis
Use statistical programs to complete statistical analysis.
Interpret and report statistical results
Interpret and report statistical results in APA format.
Critique appropriateness of statistical methods used
Locate research articles and Critique the statistical methods used and reported.
SPSS Procedures
All students will demonstrate fluency in SPSS commands and functions
Interpreting SPSS
All students will demonstrate fluency in interpreting SPSS ouptut files.
Selecting Appropriate Analysis
All students will demonstrate fluency in selecting the appropriate statistical analysis based on the research questions and the nature of the data.

Assignments

Assignment Descriptions

HW - Descriptive - SELECTION

May 08 Due: Monday, May 08 at 1:00 pm

Descriptive Homework Assignment

Quiz - Descriptive - SELECTION

May 08 Due: Monday, May 08 at 3:50 pm

Descriptive Homework Assignment

HW - t-test / ANOVA - SELECTION

May 10 Due: Wednesday, May 10 at 12:59 pm

Homework Assignment #1 - Conditional 1 point for correct selection t-test ANOVA non-parametric

Quiz - t-test / ANOVA - SELECTION

May 10 Due: Wednesday, May 10 at 1:25 pm

Single Sample t-test Independent Samples t-test Paired Samples t-test One-Way ANOVA

HW - ANOVA Family - SELECTION

May 15 Due: Monday, May 15 at 12:59 pm

Homework Assignment #2 - Conditional Review t-tests (6) One-way ANOVA (2) non-parametric (1) New RM ANOVA (2) ANCOVA (2) Factorial ANOVA (2) Split-Plot ANOVA (2) non-parametric (1)

Take Class Members Quiz

May 15 Due: Monday, May 15 at 12:59 pm

Quiz - ANOVA Family - SELECTION

May 15 Due: Monday, May 15 at 1:40 pm

REVIEW Single Sample t-test Independent Samples t-test Paired Samples t-test One-Way ANOVA NEW ANCOVA Repeated Measures ANOVA Factorial ANOVA Split-Plot ANOVA

In-Class Activity - Created Test

May 15 Due: Monday, May 15 at 11:59 pm

HW - Relationship - SELECTION

May

17 Due: Wednesday, May 17 at 12:59 pm

Homework Assignment #3 - Conditional Review t-tests One-way ANOVA RM ANOVA ANCOVA Factorial ANOVA Split-Plot ANOVA New Pearson Correlation Partial Correlation Phi-Coefficient Point Biserial Spearman' Rho Kendall's Tau

Quiz - Relationship - SELECTION

May 17 Due: Wednesday, May 17 at 1:40 pm

REVIEW Single Sample t-test Independent Samples t-test Paired Samples t-test One-Way ANOVA ANCOVA Repeated Measures ANOVA Factorial ANOVA Split-Plot ANOVA NEW Pearson Correlation Partial Correlation Phi-Coefficient Point Biserial Spearman' Rho Kendall's Tau

HW - Descriptive - RUN

May 22 Due: Monday, May 22 at 1:00 pm

HW - Descriptive - RUN

HW - All Methods - SELECTION

May 22 Due: Monday, May 22 at 1:00 pm

Homework Assignment #4 - Conditional Review t-tests (1) One-way ANOVA (1) RM ANOVA (1) ANCOVA (1) Factorial ANOVA (1) Split-Plot ANOVA(1) Non-parametric (1) Pearson Correlation (1) Partial Correlation (1) Phi-Coefficient (1) Point Biserial (1) Spearman' Rho (1) Kendall's Tau (1) New Single Linear Regression (2) Multiple Linear Regression (2)

Midterm #1 - SELECTION

May 22 Due: Monday, May 22 at 1:30 pm

REVIEW Single Sample t-test Independent Samples t-test Paired Samples t-test One-Way ANOVA ANCOVA Repeated Measures ANOVA Factorial ANOVA Split-Plot ANOVA Non-parametric Pearson Correlation Partial Correlation Phi-Coefficient Point Biserial Spearman' Rho Kendall's Tau Single-Linear Regression Multiple-Linear Regression NEW Chi-Square Test of Independence Chi-Square Goodness of Fit

Quiz - Descriptive - RUN

May 22 Due: Monday, May 22 at 11:59 pm

HW - Descriptive - RUN

HW - t-test / ANOVA - RUN IN SPSS

Jun 05 Due: Monday, Jun 05 at 1:00 pm

Run and Interpret Single-Sample t-test Independence Samples t-test Paired Samples t-test One-way ANOVA

QUIZ - t-test / ANOVA - RUN & Basic Intepret IN SPSS

Jun

05 Due: Monday, Jun 05 at 11:59 pm

QUIZ - t-test / ANOVA - RUN IN SPSS

HW - ANOVA Family - RUN & INTERPRET

Jun 07 Due: Wednesday, Jun 07 at 1:00 pm

Running and Reporting Quiz

QUIZ - ANOVA Family - RUN & INTERPRET

Jun 07 Due: Wednesday, Jun 07 at 1:50 pm

Running and Reporting Quiz

HW - Relationship Methods - RUN & INTERPRET

Jun 12 Due: Monday, Jun 12 at 1:00 pm

Run and Interpret Single-Sample t-test Independence Samples t-test Paired Samples t-test One-way ANOVA Split-Plot ANOVA Single-linear Regression Pearson Correlation

In-Class Midterm & Final Prep Assignment

Jun 12 Due: Monday, Jun 12 at 4:00 pm

Practice for Midterm and Final
In-Class Activity - Click here (https://docs.google.com/document/d/1qPRL3riN0jWuHSc-QdlJfrub7Xyt5qvgRiNer2KQ9SM/edit#)
Upload your Word Document and SPSS File

Midterm #2 - RUN & INTERPRET

Jun 14 Due: Wednesday, Jun 14 at 1:40 pm

Midterm #2 - RUN & INTERPRET

Final Project

Jun 19 Due: Monday, Jun 19 at 11:59 pm

Final Project

Extra Credit

Jun 19 Due: Monday, Jun 19 at 11:59 pm

The Final Exam

Jun

21 Due: Wednesday, Jun 21 at 5:30 pm

This is the Final

Point Breakdown

Categories	Percent of Grade
Final Exam	20.34%
Run & Report HW	7.46%
Procedural / Reporting	14.92%
Final Project	8.47%
Conditional Quizzes	11.19%
Running & Reporting Quiz	7.12%
Conceptual Quiz	0%
Conditional Homework	18.64%
Midterms	5.08%
Procedural / Reporting	0%
In-class Activity	5.08%
HW from Inclass	1.69%

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.

Preventing Sexual Misconduct

As required by Title IX of the Education Amendments of 1972, the university prohibits sex discrimination against any participant in its education programs or activities. Title IX also prohibits sexual harassment-including sexual violence-committed by or against students, university employees, and visitors to campus. As outlined in university policy, sexual harassment, dating violence, domestic violence, sexual assault, and stalking are considered forms of "Sexual Misconduct" prohibited by the university.

University policy requires any university employee in a teaching, managerial, or supervisory role to report incidents of sexual misconduct that come to their attention through various forms including face-to-face conversation, a written class assignment or paper, class discussion, email, text, or social media post. If you encounter Sexual Misconduct, please contact the Title IX Coordinator at t9coordinator@byu.edu or 801-422-2130 or Ethics Point at https://titleix.byu.edu/report (https://titleix.byu.edu/report) or 1-888-238-1062 (24-hours). Additional information about Title IX and resources available to you can be found at http://titleix.byu.edu (http://titleix.byu.edu).

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.

Schedule

Date	Course Purpose & Outcomes	Inclass Activities	Out of Class Prep & Practice
Week 1			
W May 03 Wednesday	**Course Purpose** By the end of this course, you will have greater capacity to benefit the lives of others by being a better **discerner** and **presenter** of truth using educational quantitative inquiry. **Expected Learning Outcome #1** - You will be able to **SELECT** appropriate statistical methods to answer basic research problems.	**Introduction to the Course** 1. Syllabus 2. Decision-Based Learning - **Software** 3. CPSE 651 Expert Decision Model.pdf Download **Learning Activity to Prepare for Homework Assignment** 1. **TOPIC - Descriptive Statistics (SELECTION)** 2. Day 1 - Select - Descriptive Statistics (3).pptx Download 3. Compute Mean, Median, Mode.xlsx Download 4. Standard Deviation - Practice Sheet.xlsx Download 5. Work on Homework Assignment (if time permits)	**Homework Assignment Due at Beginning of Class Next Time** **HW - Descriptive - SELECTION Opens** ***Prep for Quiz at Beginning of Next Class*** • Flashcards - **Select** descriptive Statistical Methods
Week 2			

M May 08 Monday	**Expected Learning Outcome #1** - How do I **SELECT** the correct analyses for my research questions?	***Quiz at Beginning of Class*** **Quiz - Descriptive - SELECTION** **Learning Activity to Prepare for Homework Assignment** 1. **TOPIC - Inferential: t-tests / one-way ANOVA (SELECTION)** 2. Day 2 - Decision-Based.pptx Download 3. Work on Homework Assignment (if time permits)	**Homework Due by Start of Class** (see previous day) **HW - Descriptive - SELECTION Closes** **Homework Assignment Due at Beginning of Class Next Time** **HW - t-test / ANOVA - SELECTION Opens** ***Prep for Quiz at Beginning of Next Class*** • Flashcards - **Select** - tests / one-way ANOVA **Conceptual Reading Activity** - These highly visual online Power Points are for those who want to go deeper into the statistics behind these methods: • Single Sample t-test • Independent Samples t-test • Paired Samples t-test • One-way Analysis of Variance

W May 10 Wednesday	**Expected Learning Outcome #1** - How do I **SELECT** the correct analyses for my research questions?	***Quiz at Beginning of Class*** **Quiz - t-test / ANOVA - SELECTION** **Learning Activity** 1. **TOPIC - RM, Split-Plot, Factorial ANOVAs and ANCOVA (SELECTION)** 2. Day 3 - Decision-Based (1).pptx Download 3. Work on Homework Assignment (if time permits)	**Homework Due by Start of Class** (see previous day) **HW - t-test / ANOVA - SELECTION Closes** **Homework Assignment Due at Beginning of Class Next Time** **HW - ANOVA Family - SELECTION Opens** ***Prep for Quiz at Beginning of Next Class*** • Flashcards - **Select** RM, Split-Plot, Factorial ANOVAs and ANCOVA
Week 3			
M May 15 Monday	**Expected Learning Outcome #1** - How do I **SELECT** the correct analyses for my research questions?	***Quiz at Beginning of Class*** **Quiz - ANOVA Family - SELECTION** **Learning Activity** 1. **TOPIC - All Relationship Methods (SELECTION)** 2. Day 4 - Decision-Based.pptx Download 3. Work on Homework Assignment (if time permits) **Due at the beginning of class** **In-Class Activity - Created Test**	**Homework Due by Start of Class** (see previous day) Test created by Lyndsay, Matt & Judy for Stacey & Kade to take: • Lyndsay - Matt - Judy - t-test & ANOVA selection HW.docx Download Test created by Stacey & Kade for Lyndsay, Matt & Judy to take: • Stacie & Kade - t test & ANOVA selection HW.docx Download **Take Class Members Quiz** **HW - ANOVA Family - SELECTION Closes**

			Homework Assignment Due at Beginning of Class Next Time **HW - Relationship - SELECTION Opens** ***Prep for Quiz at Beginning of Next Class*** • Flashcards - **Select** all relationship methods **Conceptual Reading Activity** - These highly visual online Power Points are for those who want to go deeper into the statistics behind these methods: • One-way ANCOVA • Repeated Measures ANOVA • Factorial ANOVA • Split-Plot ANOVA

W May 17 Wednesday	**Expected Learning Outcome #1** - How do I **SELECT** the correct analyses for my research questions? **Expected Learning Outcome #2** -How do I **RUN** my own analyses and **REPORT** the results?	***Quiz at Beginning of Class*** **Quiz - Relationship - SELECTION** **Learning Activity** 1. **TOPIC -** • **All Methods (SELECTION)** • **Descriptives - (RUN & BASIC INTERPRETATION)** 2. Chi-square Conditional - • Diff-Rel-Ind-GofF.pptx Download 3. Running Descriptive Statistics - • Access Demonstrations by clicking here • Descriptive - Data Set.xlsx Download 4. Work on Homework Assignment (if time permits)	**Homework Due by Start of Class** (see previous day) **Homework Assignment Due at Beginning of Class Next Time** **HW - Relationship - SELECTION Closes** **HW - All Methods - SELECTION Opens** ***Prep for MIDTERM #1 at Beginning of Next Class*** • Flashcards - **Select** all 18 methods covered in this class ***Prep for Descriptive Run & Interpret Quiz*** • **Flashcards** - **RUN** descriptive **HW - Descriptive - RUN Opens**
Week 4			

M May 22 Monday	**Expected Learning Outcome #1** - You will be able to **SELECT** appropriate statistical methods to answer basic research problems. **Expected Learning Outcome #2** -How do I **RUN** my own analyses and **REPORT** the results?	***Midterm #1 - SELECTION - at Beginning of Class*** **Midterm #1 - SELECTION** **Quiz - Descriptive - RUN** **Learning Activity** 1. **TOPIC - t-tests / ANOVA - (RUN & BASIC INTERPRETATION)** 2. Conceptual Explanation - Hypothesis Testing (3).pptx Download • Data Set - Data for Hypothesis Testing.xlsx Download • 1. Running t-tests / ANOVAs - Access Demonstrations by clicking here 2. Basic Interpreting t-tests / ANOVAs - Access Demonstrations by clicking **here** 3. Work on Homework Assignment (if time permits)	**Homework Due by Start of Class** (see previous day) **HW - All Methods - SELECTION Closes** **HW - Descriptive - RUN Closes** **Homework Assignment Due at Beginning of Class Next Time** **HW - t-test / ANOVA - RUN IN SPSS Opens** • Practice running all four tests on the David Data set - David.sav Download ***Prep for QUIZ on running & interpreting t-tests / ANOVA using SPSS*** • Flashcards - **RUN t-tests / ANOVA** • Flashcards - **BASIC INTERPRETATION OF t-tests / ANOVA**
W May 24 Wednesday			
Week 5			
M May 29 Monday	**Memorial Day**		
W May 31 Wednesday	**Expected Learning Outcome #2** -How do I **RUN** my own analyses and **REPORT** the results?	**Conceptual Reinforcement** This will be an interactive conceptual journey facilitated by your guide - Dr. Fischer. This experience will help you be better able to explain relevant concepts regarding your's or other's research.	Any homework assigned by Dr. Fischer
Week 6			

M Jun 05 Monday	**Expected Learning Outcome #2** -How do I **RUN** my own analyses and **REPORT** the results?	***Quiz at Beginning of Class*** **QUIZ - t-test / ANOVA - RUN & Basic Intepret IN SPSS** **Learning Activity** 1. **TOPIC - Running ANOVA Family:** RM ANOVA, ANCOVA, Factorial ANOVA, Split-plot ANOVA 2. Practice Data Set 3. **Running** ANOVA Family - Access Demonstrations by clicking here 4. Work on Homework Assignment (if time permits)	**Homework Due by Start of Class** (see previous day) **HW - t-test / ANOVA - RUN IN SPSS Closes** **Homework Assignment Due at Beginning of Class Next Time** **HW - ANOVA Family - RUN & INTERPRET Opens** ***Prep for QUIZ on running & interpreting ANOVA Family methods*** • Flashcards - **RUN ANOVA Family** • Flashcards - **BASIC INTERPRETATION OF ANOVA Family** • Practice running single sample t, independent samples t, paired samples t, and one-way ANOVA on the David Data Set -
W Jun 07 Wednesday	**Expected Learning Outcome #2** -How do I **RUN** my own analyses and **REPORT** the results?	***Quiz at Beginning of Class*** **QUIZ - ANOVA Family - RUN & INTERPRET** **Learning Activity** 1. **TOPIC - Running** Relationship Methods 2. **Running** Relationship Methods - Access Demonstrations by clicking here 3. Work on Homework Assignment (if time permits) **Class Schedule**	**Homework Due by Start of Class** (see previous day) **HW - ANOVA Family - RUN & INTERPRET Closes** **Homework Assignment Due at Beginning of Class Next Time** **HW - Relationship Methods - RUN & INTERPRET Opens**

		1. **Null-Hypothesis Activity -** State the null-hypotheses for all "difference between group means" methods. Click here (20 min) 2. Quiz (20 min) 3. **Running Methods Activity** • Correlation Excel Sheet Computer Game (10 min) - Correlation Practice Sheet.xlsx Download ◦ Run and Interpret - Pearson, Partial, Phi, Point-Biserial, Spearman's, Kendall's, (30 min)In-class practice - Relationship & Chi-Square.docx Download ◦ Access Running Relationship & Chi-square test of Independence Demonstrations by clicking here ◦ Break (5 min) • Brief yet powerful - Regression Explanation (30 min) ◦ Run and Interpret - Single-Linear Regression and Multiple-Linear Regression (20 min) • Run and Interpret Chi-Square Test of Independence (10 min) 4. Deeper Regression Explanation by Dr. Fischer (25 min)	***Prep for QUIZ on running & interpreting RELATIONSHIP & Chi-Square methods*** • Flashcards - Run all Relationship Methods • Flashcards - RUN Chi-Square Tests • Flashcards - BASIC INTERPRETATION OF Relationship and Chi-Square Tests ***Prep for Midterm #1 on running & interpreting for ALL METHODS*** • Flashcards - RUNNING **ALL** METHODS • Flashcards - INTEPRETING **ALL** METHODS
Week 7			

M Jun 12 Monday	**Expected Learning Outcome #2** -How do I **RUN** my own analyses and **REPORT** the results?	**How to** • RUN **ALL** METHODS - Flashcards • INTERPRET **ALL** METHODS - Flashcards **In-Class Midterm & Final Prep Assignment**	**Homework Due by Start of Class** (see previous day) **HW - Relationship Methods - RUN & INTERPRET Closes**
W Jun 14 Wednesday	**Expected Learning Outcome #3** - How will I **DESCRIBE** in my own words the results of published quantitative research of interest to me?	**Midterm #2 - Running and Basic Interpreting** **Midterm #2 - RUN & INTERPRET** In-Class Abstract Practice Presentation.pptx Download Final Project Example.pptx Download	Prepare for Presentation Prepare for Final Exam
Sa Jun 17 Saturday			
Week 8			
M Jun 19 Monday	**Expected Learning Outcome #3** - How will I **DESCRIBE** in my own words the results of published quantitative research of interest to me? **Expected Learning Outcome #4** - How will I **PRODUCE** a very basic research study of my own and present it?	**Final Project** Presentations Final Preparation **Final Project**	Prepare for Final Exam
T Jun 20 Tuesday	**Spring Exam Preparation (06/20/2017 - 06/20/2017)**		
W Jun 21 Wednesday	**First Day of Spring Final Exams (06/21/2017 - 06/22/2017)**	**The Final Exam** Final Exam: 105 SWKT 3:00pm - 4:50pm	