“You cannot teach a man anything, you can only help him find it within himself.”

- Galileo Galilei

Instructor: Kand S McQueen, Ph.D.  
Office: SPEA 237
Phone: (812) 855-4944  
EMAIL: ksmcquee@indiana.edu

NOTE: The best way to contact me is by email

Teaching Assistant: Nate Schuster: naschust@indiana.edu


This course will provide an introduction to the analysis of quantitative data via statistical analyses. Topics covered include, but are not limited to, descriptive statistics, $z$-scores, probability, $z$-tests, $t$-tests, correlation, regression. The focus is on the practical interpretation and application of statistics.

**Course Objectives:**

- Identify and describe basic statistical concepts and techniques
- Select the appropriate statistical analysis for a given research question and data set
- Conduct basic statistical analyses
- Interpret and evaluate statistical analyses
- Recognize and understand the APA style of reporting results of statistical analyses

**Required and Recommended Materials:**

No traditional textbook is required for this course. Rather, materials will be available via Course Packs. Course Packs may be purchased from either the University Bookstore in the IMU, [http://iub.bncollege.com](http://iub.bncollege.com), or from TIS Bookstore, [http://tisbookiu.com](http://tisbookiu.com). Prices and availability may vary from store to store.

Course Packs are printed by IU Custom Printing. This is from David Stewart, my IU Custom Printing representative:
The Course Manuals (ClassPak) are available at these IU Campus Textbook stores:

TIS Bookstore (812) 332-3306 (http://tisbookiu.com)
UNION Bookstore (812) 855-9628 (http://iub.bncollege.com)

IF there is not a Course Packet on the shelves, it is because that store has sold out of their initial order. When that happens, Students can either look elsewhere, or, they can ‘reserve a copy’ according to each particular store’s procedure and return to that store to pick it up according to that store’s policy.

Please note: The stores will not re-order a Course Packet that is “sold out” unless a student PLACES AN ORDER. This can be done in person or on the phone.

We at IU Custom will make sure to get the manuals to the store on a next day basis (not including weekends), if the order is placed prior to 2:00 P.M.

I would be happy to help anyone who contacts me.

It is recommended that students, prior to placing an order, ask the store for a commitment of when they can pick up their order.

Dave Stewart
Course Packet Specialist
IU Custom Publishing
(812) 856-1421
daestewa@indiana.edu

Required:

- Course Packs:
  - SPEA V – 506: Course Notes
  - STATA: Volume 1
- Calculator
- Access to STATA (see below)

Recommended/Optional:

- Course Pack:
  - SPEA V – 506: Practice Problems (*Note:* an e-book of this course pack will be available on Canvas)

Statistical Software—STATA:

- STATA is the statistical software package used in this section of V-506. There are two ways for you to access the program:
1. IUAnyWare
   - STATA is available for free via IUAnyWare at https://iuaryware.iu.edu/vpn/index.html
     You will need to contact UITS with any technical issues you have accessing the program in this manner.
   - Streaming software is always a bit tricky as sometimes the system can get slow or buggy when traffic is high.
2. Purchase your own copy.
   - There are several versions, the lower two being STATA/IC and STATA/SE. STATA/SE can handle very large data sets. STATA/IC is adequate for this class and for most statistical analyses situations.
   - There are platforms available for both Windows and Mac.
   - Costs:
     - As a student enrolled in a degree-granting institution, you can purchase your own copy at a considerable discount (https://www.stata.com/order/new/edu/gradplans/student-pricing/ ).
       - STATA/IC
         - $198 for a perpetual license
         - $89 for an annual license
         - $45 for a 6-month license
       - STATA/SE for large datasets
         - $395 for a perpetual license
         - $235 for an annual license
         - $125 for a 6-month license
       - Note: If you purchased STATA/IC with no student or university affiliation, it would cost $1,195 for a perpetual license

Teaching and Learning Methods:

The format for this course will be a bit different than that of a traditional online course. I’ll be recording lectures every week which will be available via Canvas. There will be between 2½ to 3 hours of recordings for class content every week. You’ll need to watch the weekly recordings every week. This will make it as much like face-to-face instruction as possible. This system will allow you to both watch and absorb the material at your own pace and provide the opportunity for multiple viewings. There will be also be videos that provide practice problems, and videos that will teach you how to use the software STATA in addition to the regular course content videos. A video that provides a more in-depth explanation is available at: http://youtu.be/KpIkQyTCZCU
The learning methods are as follows:

1. **Quizzes**: There will be up to ten open note/open book online quizzes, which will provide a review of relevant course material.

2. **Homework Assignments**: There will be up to six, ungraded, homework assignments. These will provide an experiential learning opportunity to apply the concepts learned in class and to learn STATA.

3. **Exams**: There will be a midterm and final examination, both of which will be taken online.

**Teaching Assistants**

There will be a teaching assistant available to you. His/her job is to provide guidance and be there to answer questions. *Contact your teaching assistant for any and all questions pertaining to the course or to the course content.* I will become involved as necessary.

**Canvas Website:** [http://canvas.iu.edu](http://canvas.iu.edu)

Canvas will be used throughout the course and should be checked on a regular basis for announcements and assignments. All course material will be accessed through Canvas. If you are unable to access Canvas for any reason, contact University Information Technology Services (UITS) immediately.


**University Information Technology Services (UITS):** [https://uits.iu.edu](https://uits.iu.edu)

- Knowledge Base: [kb.iu.edu](http://kb.iu.edu)
- Live Chat: [ithelplive.iu.edu](http://ithelplive.iu.edu)
- Phone: (812) 855-6789
- Email: ithelp@iu.edu
- Walk-in: Wells Library Learning Commons, Indiana Memorial Union M089
- Top 10 Technology Services for IU students: [https://kb.iu.edu/d/bdod](https://kb.iu.edu/d/bdod)

**Course Requirements**

**A. Development of a working understanding of the course content.**

*Most programs require a grade of B or better in this course.* To earn a B in this course you must develop a working understanding of all of the concepts presented throughout the semester. Mastery of the concepts is necessary to earn a grade of A. Statistics is a very difficult subject for most people. Consequently, earning a B will require constant effort on your part. Approaching this class with an attitude of “… just getting by” will most likely result in needing to take the class again.
B. Staying current: You are expected to watch and study the materials each week. It is mandatory that you keep up with the course content. Statistics is a difficult subject and it will require constant effort on your part. It is absolutely essential, and a requirement of the course, that you stay current on the course material. This will require you to spend time outside of class every single week studying the material presented during the previous class session. Each class will present new material that will build on what was taught in previous sessions.

C. Ask Questions

It is required that you ask questions when you do not understand. Note: Make them thoughtful questions; this will be explained more thoroughly in one of the beginning videos.

D. Canvas Announcements

Communication will occur via posted Announcements and/or emails sent through Canvas. It is required that all students read each and every email or announcement, as you are responsible for knowing the information provided.

Course Policies

A. Missing Due Dates

Missing an Exam: If you have to miss an exam, you must notify me by e-mail before the exam time. Emergencies will be dealt with on an individual basis, but the base policy is as follows:

1. No make-up exam will be allowed if I am not notified of your absence ahead of time.
2. If I am not contacted within 24 hours of missing the exam, you will earn 0 points on the exam with no opportunity to make up the test.
3. In the case of an emergency, official documentation of the emergency is required before a make-up will be considered. Contact me as soon as possible if you experience a situation that prevents you from completing an exam on time.

Additionally:

• You will earn 0 points on the exam if I am not contacted within 24 hours of missing the exam.
• You will earn 0 points on the exam if I am not contacted within 24 hours of missing the exam.
• You will earn 0 points on the exam if I am not contacted within 24 hours of missing the exam.

I WILL NOT GO LOOKING FOR YOU. It is your responsibility to let me know what is going on within 24 hours of missing the exam. There are very few situations that will warrant an exception to this policy.
Late Quizzes. You will have one week+ to complete each of the online quizzes. If you do not complete a quiz within that time, you will receive zero points for that quiz. In the event of an emergency, it is your responsibility to contact me as soon as possible. Emergencies will be dealt with on a case-by-case basis.

B. Stay Current: There is no way you will be able to master the course content if you do stay current by watching the videos every week.

C. Academic Integrity: From the Office of Student Ethics website (https://studentaffairs.indiana.edu/office-student-ethics/misconduct-charges/academic-misconduct.shtml):

“Academic Misconduct

The IU Code of Student Rights, Responsibilities, and Conduct defines academic misconduct as “any activity that tends to undermine the academic integrity of the institution.” Cheating, fabrication, and plagiarism are a few examples.”

For a complete description of the judicial procedures associated with personal misconduct, please see IU’s Code of Student Rights, Responsibilities, and Conduct – Student Disciplinary Procedures: Academic Misconduct at http://studentcode.iu.edu

Cheating will be prosecuted to the full extent of IU’s policy up to and including failing the course.

D. Disability Policy: Any student who has a disability that may affect his/her academic performance must contact the university disability office. Information can be found at https://studentaffairs.indiana.edu/disability-services-students/

E. Academic and Classroom Misconduct: All students are expected to be in compliance with Indiana University's Code of Student Rights, Responsibilities, and Conduct both within and outside the classroom. Disturbances which occur in a teaching/learning context are particularly troublesome, as they disrupt the primary function of the University. Part II, Section H (6) of the Code indicates that "obstructive and disruptive conduct which interferes with teaching, research, administration, other university or university-authorized activity" may result in disciplinary sanctions against students who commit such acts. Information on the university’s guidelines for dealing with disruptive students can be found at http://www.iu.edu/~ufc/docs/policies/DisruptiveStudents.pdf

F. Incompletes: University policy states:

The grade of Incomplete used on the final grade reports indicates that the work is satisfactory as of the end of the semester but has not been completed. The grade of Incomplete may be given only when the completed portion of a student’s work in the course is of passing quality. Instructors may award the grade of Incomplete upon a showing of such hardship to a student as would render it unjust to hold the student to the time limits previously fixed for the completion of his/her work (Source: http://policies.iu.edu/policies/categories/academic-faculty-students/academic-student-affairs/incompletes.shtml)
If such a situation arises, you must inform me IMMEDIATELY. Failure to grasp the material does not constitute grounds for an incomplete.

G. Additional Information:


2. Disability Services for Students. For information about support services or accommodations available to students with disabilities, and for the procedures to be followed by students and instructors: http://studentaffairs.iub.edu/dss/.
3. Sexual Harassment. As your instructor, one of my responsibilities is to help create a safe learning environment on our campus. Title IX and our own Sexual Misconduct policy prohibit sexual misconduct. If you have experienced sexual misconduct, or know someone who has, the University can help.
   If you are seeking help and would like to speak to someone confidentially, you can make an appointment with:
   
   i. The Sexual Assault Crisis Service (SACS) at 812-855-8900
   ii. Counseling and Psychological Services (CAPS) at 812-855-5711
   iii. Confidential Victim Advocates (CVA) at 812-856-2469
   iv. IU Health Center at 812-855-4011

For more information about available resources: http://stopsexualviolence.iu.edu/help/index.html

It is also important that you know that federal regulations and University policy require me to promptly convey any information about potential sexual misconduct known to me to our campus’ Deputy Title IX Coordinator or IU’s Title IX Coordinator. In that event, they will work with a small number of others on campus to ensure that appropriate measures are taken and resources are made available to the student who may have been harmed. Protecting a student’s privacy is of utmost concern, and all involved will only share information with those that need to know to ensure the University can respond and assist. I encourage you to visit http://stopsexualviolence.iu.edu to learn more.

H. Miscellaneous: It is not possible to foresee every kind of circumstance that may arise during the semester. Consequently, I reserve the right to handle any situation as I see fit.

I. This syllabus is only a guide. Any changes or adjustments will be documented through Canvas announcements.
Grades

In order to achieve a B in the course, you must develop a working understanding of all concepts covered. A grade of A will be awarded only to those who show mastery of content.

Grades will be based on the following:

- Up to 10 online quizzes, open note/open book
- 2 online exams, open note/open book.
  - Note. Consulting with one another during quizzes and exams will be considered cheating.

Final grades will be based on the above, which will be weighted as follows:

Midterm (40%)
Final (40%)
Quizzes (20%)

Letter Grade Scale. (Note: Final percentages will be rounded to the nearest 10th):

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td>97-100%</td>
</tr>
<tr>
<td>A</td>
<td>93-96.9%</td>
</tr>
<tr>
<td>A-</td>
<td>90-92.9%</td>
</tr>
<tr>
<td>B+</td>
<td>87-89.9%</td>
</tr>
<tr>
<td>B</td>
<td>83-86.9%</td>
</tr>
<tr>
<td>B-</td>
<td>80-82.9%</td>
</tr>
<tr>
<td>C+</td>
<td>77-79.9%</td>
</tr>
<tr>
<td>C</td>
<td>73-76.9%</td>
</tr>
<tr>
<td>C-</td>
<td>70-72.9%</td>
</tr>
<tr>
<td>D+</td>
<td>67-69.9%</td>
</tr>
<tr>
<td>D</td>
<td>63-66.9%</td>
</tr>
<tr>
<td>D-</td>
<td>60-62.9%</td>
</tr>
<tr>
<td>F</td>
<td>0-59.9%</td>
</tr>
</tbody>
</table>

There will be NO negotiation on the grading scale

Due Dates for Quizzes and Exams

Due dates and the Midterm Exam date will be announced throughout the semester. We need the flexibility in the schedule to allow the course to unfold at a speed that is comfortable for this particular group of students. Experience has shown me that different groups progress at different rates. If you, as a group, become confused with some particular content, we need the flexibility to slow down as needed to ensure you are successfully mastering the content.

Quizzes. There will be up to 10 quizzes throughout the course of the semester. Quizzes will be open book/open note.

Online quizzes will be available for one week after they are announced, during which you may complete the quiz at any time that is convenient. You will be notified via one of the videos when it is time to take a quiz. That quiz will then be available until midnight Friday of the following week.

You will have 60 minutes to complete the quiz. Once you begin, you must finish. In other words, you may not log into a quiz, log out, and then log back in.

You will be allowed up to two attempts on each quiz. If you choose to take a quiz twice, your final grade on that quiz will be the average of your two attempts.
Quizzes will be in the format of multiple choice, true/false, matching, and fill-in-the-blank calculations. *Be sure to follow all instructions exactly.*

**Homework.** There will be several homework assignments given throughout the semester. The homework will serve the following purposes:

1. This is where you will learn how to use STATA
2. The homework provides an experiential learning opportunity to apply what you have learned to real data sets
3. The homework will prepare you for the exams

**Homework will not be turned in or graded.** A complete review of each homework assignment will be provided and all of your questions will be addressed.

- When working through the homework, consult your notes. Answers to most questions can be found in the notes. If you are still confused after consulting the notes, formulate specific questions. *If you keep up by spending time studying the material every week the material will be less confusing and the homework much easier to complete.*

**Exams.** Exams will be online, open note/open book. Examples of question formats are multiple choice, true/false, matching and fill-in-the-blank calculations. You will need a calculator in order to complete the exam. The exam will be made available for a 24-hour period during the exam day.

**IMPORTANT:**
- The amount of time you spend or how hard you work *does not influence your grade whatsoever.*
- Working a fulltime or part-time job of any kind does not mitigate how you are expected to perform or how grades are earned
- Cheating and/or plagiarism will be prosecuted to the full extent of university policy, up to and including failing the course.

**ABSOLUTELY NO EXTRA CREDIT ASSIGNMENTS WILL BE GIVEN**

**Real-Time Meeting Opportunities**

There will be several, real-time question and answer sessions throughout the semester that will take place every 2 to 3 weeks as needed. We will ‘meet’ for those sessions via Zoom [https://uits.iu.edu/zoom](https://uits.iu.edu/zoom).

Sessions will be held on Thursdays from 3:30 to 5:00 EST; specific dates will be announced in advance. The sessions will be recorded to accommodate those of you who are not available to ‘attend’ in real time, and, to allow you to review the discussions multiple times if desired. If you are not available to attend but have question(s) you would like for me to address, you may email me ahead of time.
SCHEDULE

This is a tentative schedule. Changes may occur throughout the semester. The schedule is subject to change in the event of extenuating circumstances as needed. Due dates will be announced well in advance as the semester progresses.

<table>
<thead>
<tr>
<th>Subject</th>
<th>Quizzes &amp; Assignments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class orientation</td>
<td></td>
</tr>
<tr>
<td>Introduction to Research</td>
<td><strong>Quiz 1</strong>: Intro to Research</td>
</tr>
<tr>
<td>Graphical Representation</td>
<td><strong>Quiz 2</strong>: Graphs &amp; Tables</td>
</tr>
<tr>
<td>Descriptives</td>
<td><strong>Quiz 3</strong>: Descriptives</td>
</tr>
<tr>
<td>Statistical Modeling &amp; Goodness-of-Fit</td>
<td></td>
</tr>
<tr>
<td>Probability &amp; the Normal Curve</td>
<td><strong>Quiz 4</strong>: Estimating Probabilities</td>
</tr>
<tr>
<td><strong>z</strong> – tests</td>
<td><strong>Quiz 5</strong>: <strong>z</strong>-tests</td>
</tr>
<tr>
<td></td>
<td>Homework 1: Descriptives due</td>
</tr>
<tr>
<td>Midterm Exam</td>
<td>Date TBA</td>
</tr>
<tr>
<td><strong>t</strong> – tests</td>
<td><strong>Quiz 6</strong>: <strong>t</strong>-tests</td>
</tr>
<tr>
<td>Effect Size &amp; Confidence Intervals</td>
<td>Article: Testosterone &amp; Libido</td>
</tr>
<tr>
<td></td>
<td>Homework 2: <strong>t</strong>-tests due</td>
</tr>
<tr>
<td>Correlation</td>
<td><strong>Quiz 7</strong>: Correlation</td>
</tr>
<tr>
<td>Regression</td>
<td><strong>Quiz 8</strong>: Regression</td>
</tr>
<tr>
<td>One-Way ANOVA</td>
<td>Homework 3: Correlation &amp; Regression due</td>
</tr>
<tr>
<td></td>
<td><strong>Quiz 9</strong>: One-Way ANOVA</td>
</tr>
<tr>
<td>Factorial ANOVA</td>
<td><strong>Quiz 10</strong>: Factorial ANOVA</td>
</tr>
<tr>
<td></td>
<td>Home 4: ANOVA due</td>
</tr>
<tr>
<td>Final Exam</td>
<td>Thursday, December 14, 12:01AM – 12:00 midnight</td>
</tr>
</tbody>
</table>
How to Survive Statistics

1) The Course Pack with the Class Notes will be your best friend in this class. Have them with you when you watch the videos. Everything in the PowerPoints from the lectures are included in the notes, so following along in the notes as you listen to the lectures. These are not stand-alone notes so add your own notes to them as we go along.

2) Review the notes sometime after class as soon as possible. Many times, things make sense class but then make no sense later. Early and frequent review can help you remember things and help you get a handle on exactly where your confusion lies.

3) Review the notes again before the next class.

4) Print out the homework, have it in front of you as you watch the videos, and be aware of what is on it. When something is covered about an item on the homework, make a note about it (e.g., see page 14 of the correlation notes). This way you'll know exactly where to find information about everything that is asked on the homework.

5) When you have a question about one of the homework assignments, the first thing to do is go to your notes. EVERYTHING on the homework will be illustrated in the notes.

6) As soon as you are able to complete part of the homework, do it. I will let you know when you are prepared to tackle part of the homework.

7) Ask questions. There is no such thing as a stupid question. But, be thoughtful about your after-class questions.

8) Don't get behind. This is not the kind of class where you can put off working until a week before the exam.

9) YOU HAVE TO STUDY FOR THE EXAMS. Do not just look over the homework and think, “I get it!” Look at the practice questions and see if you can complete them without your notes. If you can’t, you’re not ready for the exam.

10) This sounds like a lot of work, and it is. But in the long run, things will be easier, take less time, and you'll experience less stress if you follow these guidelines.

11) If you find yourself feeling that you, “don’t have time” do any of the above, ask yourself: “Do I have time to take this class twice?”

12) Work hard. If you don’t do the work, you won’t get the material. If you don’t get the material, you won’t pass the class.

13) Let me reiterate with a positive spin: Do the work! You’ll not only pass the class, but you’ll walk out of here understanding something that very few people understand.