



## ACN5312.003 Course Syllabus

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### Course Information:

*Course:* ACN5312.003 / HCS5312.003 / PSYC5312.003  
*Course Title:* Introductory Research Methods in Behavioral and Brain Sciences – Part 1  
*Term:* Fall 2025  
*Schedule:* Tuesday and Thursday, 4:00PM – 5:15PM  
*Classroom:* JO\_3.209

### Professor's Contact Information:

*Professor:* Dona Lontok  
*Email:* [dona.lontok@utdallas.edu](mailto:dona.lontok@utdallas.edu)  
*Office Hours:* After class on Tuesdays and Thursdays, or by appointment in Teams (after 4pm)

### Teaching Assistant Contact Information:

*TA:* Roy John Massett  
*Email:* [Roy.Masset@UTDallas.edu](mailto:Roy.Masset@UTDallas.edu)  
*Office Hours:* Thursdays 2:30-3:30pm or by appointment in Teams

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### General Course Information

#### Pre-requisites, Co-requisites, & other restrictions

ACN/HCS/PSYC 5312 Research Methods I

### Course Description

This course is designed to introduce students to basic statistical methods for the design and analysis of research. Subject areas include measurement, graphs, descriptive statistics (e.g., mean, median, mode, variance, standard deviation), distributions (e.g., normal,  $t$ , Chi-square,  $F$ ), bivariate correlation and regression, multiple correlation and regression, inferential statistics (e.g., hypothesis testing, sources of error), analysis of variance designs (e.g., between subjects, factorial designs).

### After completing the course, students should be able to:

- Describe how different research designs address different types of questions and hypotheses.
- Articulate strengths and limitations of various research designs.
- Identify the independent and dependent variables in an experimental design.

- Compute and interpret descriptive statistics (central tendencies, variability, standardized scores) as well as inferential statistical tests (ANOVA, multiple correlation and regression).
- Distinguish between statistical significance and practical significance.
- Recognize and interpret an interaction between factors.
- Write experimental results in APA format.

### Required Texts & Materials

- Andy Field, **Discovering Statistics Using IBM SPSS Statistics**, North American Edition, **5th Edition**, Sage Publications Inc. ([www.sagepublishing.com](http://www.sagepublishing.com)).
- **IBM SPSS Premium Grad Pack**, available in the classroom JO\_3.209. Students may opt to purchase a license for home use.
- Reliable internet connection and a computer with **Microsoft Office Suite**. As a UTD student, you can download Microsoft Office suites (free) from UTD Office of Information Technology (OIT) – <https://www.utdallas.edu/oit/o365/>
- **Computer or laptop**. Please note that digital tablets (i.e., iPad) or cell phone devices will not be sufficient to carry out the course work. If you do not have a computer, please contact the OIT helpdesk -- <https://www.utdallas.edu/oit/helpdesk/>

### Suggested Texts, Readings, & Materials

- Other readings will be made available throughout the semester as needed.

### eLearning

- All course material and content will be uploaded onto our eLearning page. Quizzes and exams will take place on eLearning.

### Assignments & Academic Calendar

Dates	Topics/Activities	Readings	Quiz/Homework
08/26 08/28	<ul style="list-style-type: none"> <li>• Introduction</li> <li>• The Research Process</li> <li>• Levels of Measurement</li> <li>• Developing Good Research Questions</li> </ul>	<b>Chapter 1</b>	
09/02 09/04	<ul style="list-style-type: none"> <li>• Statistical Models</li> <li>• Populations and Samples</li> </ul>	<b>Chapter 2</b>	<b>Quiz 1 (Ch. 1,2)</b> Due: 09/12, Fri @11:59PM

	<ul style="list-style-type: none"> <li>• Estimating Parameters Standard Error</li> <li>• Confidence Interval</li> <li>• Null Hypothesis Significance Testing</li> </ul>		
09/09 09/11	<ul style="list-style-type: none"> <li>• Introduction to Hypothesis Testing</li> <li>• Problems with Null hypothesis significance testing</li> <li>• How to overcome limitations of NHST</li> <li>• Bayesian statistics</li> </ul>	<b>Chapter 3</b>	
09/16 09/18	<ul style="list-style-type: none"> <li>• Assumptions Underlying a Parametric Statistic</li> <li>• Unbiased and Biased Estimator Outliers</li> <li>• SPSS: Testing Assumptions</li> </ul>	<b>Chapter 6</b>	<b>Quiz 2 (Ch. 3, 6)</b> Due: 09/22, Mon @11:59PM  <b>Homework 1: Testing Assumptions</b> Due: 09/26, Fri @ 11:59PM
<b>09/23</b>	<b>Exam 1: Part 1 (In-class, Ch. 1, 2, 3, 6)</b>		
<b>09/25</b>	<b>Exam 1 Part 2 (In-class , Ch. 1, 2, 3, 6)</b>		
09/30 10/02	<ul style="list-style-type: none"> <li>• Comparing Two Means: <i>t</i>-tests</li> <li>• Linear model for calculating <i>t</i>-test</li> <li>• SPSS: Independent <i>t</i>-test and Dependent <i>t</i>-test</li> <li>• APA style reports</li> </ul>	<b>Chapter 10</b>	<b>Homework 2: Comparing Two Means</b> Due: 10/10, Fri @11:59PM
10/07 10/09	<ul style="list-style-type: none"> <li>• Comparing Several Independent Means</li> <li>• One Way Analysis of Variance (ANOVA)</li> <li>• SPSS: Conducting One-way ANOVA and Interpreting ANOVA Outputs</li> </ul>	<b>Chapter 12</b>	<b>Homework 3: Comparing Several Means</b> Due: 10/17, Fri @11:59PM
10/14 10/16	<ul style="list-style-type: none"> <li>• Factorial Designs</li> <li>• Two-Way ANOVA</li> <li>• SPSS: Conducting Factorial ANOVA and Interpreting ANOVA Outputs</li> </ul>	<b>Chapter 14</b>	<b>Quiz 3 (Ch. 10, 12, 14)</b> Due: 10/20, Mon @11:59PM  <b>Homework 4: Factorial Design</b> Due: 10/24, Mon @11:59PM

<b>10/21</b>	<b>Exam 2: Part 1 (In-class, Ch. 10, 12, 14)</b>		
<b>10/23</b>	<b>Exam 2: Part 2 (In-class, Ch. 10, 12, 14)</b>		
10/28 10/30	<ul style="list-style-type: none"> <li>• Pearson Coefficient Correlation</li> <li>• The SPSS: conducting Pearson correlation</li> </ul>	<b>Chapter 8</b>	<b>Homework 5: Correlation</b> Due: 11/07, Fri @11:59PM
11/04 11/06	<ul style="list-style-type: none"> <li>• The Linear Model (Regression):</li> <li>• Bivariate Linear Regression</li> <li>• Multiple Regression Assumptions and Requirements of Multiple Regression</li> </ul>	<b>Chapter 9</b>	
11/18 11/20	<ul style="list-style-type: none"> <li>• The Linear Model (Regression)</li> <li>• SPSS: Multiple Regression and Interpreting Regression Outputs</li> </ul>	<b>Chapter 9</b>	<b>Homework 6: Multiple Regression</b> Due: 12/05, Fri @11:59PM
<b>11/24-11/28</b>	<b>Fall Break and Thanksgiving!</b>		
12/02 12/04	<ul style="list-style-type: none"> <li>• Multiple Regression</li> <li>• Causal Modeling: Moderation</li> <li>• Categorical Predictors and Interpreting Regression Outputs</li> </ul>	<b>Chapter 11</b>	<b>Quiz 4 (Ch. 8, 9, &amp; 11)</b> Due 12/08, Mon @ 11:59PM  <b>Homework 7: Moderation</b> Due: 12/10, Wed @11:59PM
<b>12/09</b>	<b>Exam 3: Part 1 (In-Class, Ch. 8, 9, 11)</b>		
<b>12/11</b>	<b>Exam 3: Part 2 (In-Class, , Ch. 8, 9, 11)</b>		

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### Course Policies

<b>Class Attendance</b>	The University's attendance policy requirement is that individual faculty set their course attendance requirements. Regular and punctual class attendance is expected. Students who fail to attend class regularly are inviting scholastic difficulty.
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<p><b>Class Participation</b></p>	<p>Regular class participation is expected. Students who fail to participate in class regularly are inviting scholastic difficulty.</p> <p>Class participation is documented by faculty. Successful participation is defined as consistently adhering to University requirements, as presented in this syllabus. Failure to comply with these University requirements is a violation of the <a href="#">Student Code of Conduct</a>.</p>
<p><b>Class Recordings</b></p>	<p>Students are expected to follow appropriate University policies and maintain the security of passwords used to access recorded lectures. Unless the Office of Student AccessAbility has approved the student to record the instruction, students are expressly prohibited from recording any part of this course.</p> <p>Recordings may not be published, reproduced, or shared with those not in the class, or uploaded to other online environments except to implement an approved Office of Student AccessAbility accommodation. Failure to comply with these University requirements is a violation of the <a href="#">Student Code of Conduct</a>.</p> <p>The instructor may record meetings of this course. These recordings will be made available to all students registered for this class if the intent is to supplement the classroom experience. If the instructor or a UTD school/department/office plans any other uses for the recordings, consent of the students identifiable in the recordings is required prior to such use unless an exception is allowed by law.</p>
<p><b>Grading (credit) Criteria</b></p>	<p>Evaluations:</p> <ul style="list-style-type: none"> <li>• <b>4 Quizzes</b> - Online through eLearning; Test for conceptual understanding</li> <li>• <b>3 Exams</b> - In class; Test for conceptual understanding; Divided into two parts</li> <li>• <b>7 Homework</b> – Submit to eLearning; Involves the use of SPSS and writing an APA formatted research report.</li> </ul> <p>Grades will be based on the following:</p> <ul style="list-style-type: none"> <li>• <b>Quizzes:</b> 30%</li> <li>• <b>Exams:</b> 35%</li> <li>• <b>Homework:</b> 35%</li> </ul> <p>Assignment of letter grades will be as follows:</p> <ul style="list-style-type: none"> <li>• 93-100% A</li> <li>• 90-92% A-</li> <li>• 87-89% B+</li> </ul>

	<ul style="list-style-type: none"> <li>• 83-86% B</li> <li>• 80-82% B-</li> <li>• 77-79% C+</li> <li>• 73 -76% C</li> <li>• 70-72% C-</li> <li>• 67-69% D+</li> <li>• 63-66% D</li> <li>• 60-62% D-</li> <li>• Below 60% F</li> </ul>
<b>Make-up Exams</b>	Make-up exams will be given only if: (a) you were seriously ill and have verifiable documentation from a physician, or (b) you planned prior to the exam to attend an urgent family affair (e.g., funeral).
<b>Extra Credit</b>	N/A. Your success is important, so together we will make every effort to ensure that you will succeed in this course.
<b>Late Work</b>	Late work will be accepted in the event of serious extenuating circumstances e.g., loss of a loved one, serious illness, accident.
<b>Special Assignments</b>	There are no special assignments for this course.
<b>Classroom Citizenship</b>	We expect that you will be respectful of your fellow students, the instructor, and the teaching assistant. Be aware of strong language, all caps, and be cautious about using sarcasm and humor.
<b>Comet Creed</b>	<p><i>This creed was voted on by the UT Dallas student body in 2014. It is a standard that Comets choose to live by and encourage others to do the same:</i></p> <p><i>“As a Comet, I pledge honesty, integrity, and service in all that I do.”</i></p>
<b>Academic Support Resources</b>	<p><i>The information contained in the following link lists the University’s academic support resources for all students.</i></p> <p><i>Please go to <a href="http://go.utdallas.edu/academic-support-resources">http://go.utdallas.edu/academic-support-resources</a>.</i></p>
<b>UT Dallas Syllabus Policies and Procedures</b>	<i>The information contained in the following link constitutes the University’s policies and procedures segment of the course syllabus. Please review the</i>

	<p>sections regarding the <a href="#">credit/no credit</a> grading option and withdrawal from class.</p> <p>Please go to <a href="http://go.utdallas.edu/syllabus-policies">http://go.utdallas.edu/syllabus-policies</a> for these policies.</p>
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*The descriptions and timelines contained in this syllabus are subject to change at the discretion of the Professor.*