



# EDUC 6116

# Intro to Educational Statistics

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**Classroom:**  
**Class Time: Tues 5:10-7:00pm**  
  
**Office Hours: Tues 3:45-4:45pm**  
**Thur 3:45-4:45pm**

## COURSE INFO

### Prerequisites:

None

### Course Description:

EDUC 6116 is designed to provide you with an understanding of the complexity and appreciation for the importance of research. The intention is to begin a process that will provide a foundation for your future research endeavors. The goal is to begin building a sense of competency that will enable you to become an informed consumer of the research literature, as well as prepare you to be a competent researcher. Hopefully, you will become confident and excited about the possibilities of using the scientific method to enhance your professional knowledge and performance. To achieve these objectives the course will concentrate on the fundamentals of descriptive statistics, hypothesis testing, and the t- test. We will focus on the acquisition of specific tools necessary for the research practitioner.

EDUC 6116 is the first course in a sequence of research courses that are designed to develop your research competency. The importance of it as a foundational course cannot be overstated. As such, it is assumed that for some the content material will be a review. This places an additional burden on those students to use this time in a meaningful manner. All students are challenged to create their own objectives.

### Research Methods Lab Assistant

**Who: Megan Shaine**  
**Email: edreslab@gwu.edu**  
**Phone: 202-994-3174**  
**Office Hrs:**

Fall 2012 Office Hours TBA  
 Appointments during these times are STRONGLY recommended. The Lab Assistant cannot guarantee availability without an appointment.

### What's in this Syllabus

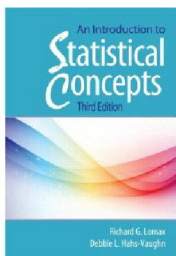
<b>Course Materials</b>	<b>2</b>
<b>SPSS</b>	<b>2</b>
<b>Grading Scale</b>	<b>3</b>
<b>Assessments</b>	<b>3</b>
<b>Dropbox</b>	<b>4</b>
<b>Late Policy</b>	<b>4</b>
<b>Accommodations</b>	<b>5</b>
<b>Integrity</b>	<b>5</b>
<b>Email</b>	<b>5</b>
<b>Attendance</b>	<b>5</b>
<b>Schedule</b>	<b>6</b>

# COURSE MATERIALS



SPSS

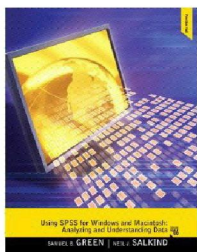
## Strongly Recommended Textbooks:



1. Lomax, R. G. (2012). *An Introduction to Statistical Concepts*. (3rd ed.). New York: Routledge.



## Optional Textbooks:

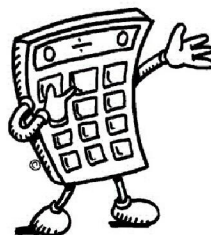


1. Green, S.B., & Salkind, N.J. (2010). *Using SPSS for Windows and Macintosh: Analyzing and understanding data*. (6th ed.). Upper Saddle River, NJ: Prentice.

2. American Psychological Association (2009). *Publication Manual of the American Psychological Association*. (6th ed.). Washington DC: American Psychological Association.

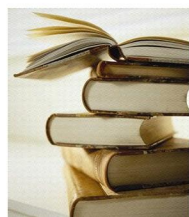
## Calculator:

You will need a calculator that is capable of calculating square roots for the homework, project, and midterm and final exams. Students are encouraged to bring calculators to class each day.



## Supplemental Readings:

In addition to the textbook (listed above), supplemental readings may be assigned periodically. These readings will be posted on Blackboard.



## Lecture Materials:

Prior to coming to class each session students are to print out all lecture materials from Blackboard, located at: <http://blackboard.gwu.edu>. Materials should be posted by the morning of the day of class. If they are not posted by the morning of the day of class, then I will bring any necessary materials for that class session to class.

**Note:** *The lecture notes are not meant to be a substitute for the class sessions themselves. Not all material covered in class is in the lecture notes. I provided you with lecture notes prior to class as a favor to you so that you are not spending time copying formulas, graphs, and output. However, it is your responsibility to take notes on other material covered during class sessions.*

## SPSS:

This course will use Statistical Package for the Social Sciences (SPSS) computer software. Students are expected to have access to SPSS/PASW to complete homework assignments. There are several options for utilizing this program:

1. A 6- or 12-month rental version of the software program can be purchased from the following website (recommended by former students): <http://e5.onthehub.com/WebStore/OfferingDetails.aspx?ws=49c547ba-f56d-dd11-bb6c-0030485a6b08&vsro=8&o=45645414-70f9-df11-9c87-0030487d8897> can be installed on the student's own computer. SPSS software has built-in safeguards to prevent unauthorized copying of software. If you choose to rent a copy of this program, be sure you buy the STANDARD GRADPACK VERSION. The Statistics Base Gradpack is limited and does not do all of the analyses we will be conducting in this course.

2. The student can use SPSS in one of the computer labs on campus.

3. A 14 day trial version can be downloaded from the IBM/SPSS website: [http://forms.cognos.com/?elqPURLPage=4333&mc=-web\\_spss\\_download](http://forms.cognos.com/?elqPURLPage=4333&mc=-web_spss_download)

**DISCLAIMER: Be sure you are using THE STANDARD GRADPACK VERSION of SPSS. The Statistics Base Gradpack is limited and does not do all of the analyses we will be conducting in this course.**

# COURSE GRADES

Your homework and exams will be combined according to the percentages shown below:

## Weighted Composite Grade:

<b>Homework (4)</b>	<b>40%</b>
<b>Midterm Exam</b>	<b>30%</b>
<b>Final Exam</b>	<b>30%</b>

Final grades will be assigned based on the following scale:

## Letter Grade Scale:

92% and above	A
90% - 91.99%	A-
88% - 89.99%	B+
82% - 87.99%	B
80% - 81.99%	B-
78% - 79.99%	C+
72% - 77.99%	C
65% - 71.99%	C-
64.99% and below	F

## Grading Policies:

- Numerical grades will not be rounded.
- Grades will not be changed unless a computational error has been made.
- No grades will be dropped.
- There will be no extra credit.
- Grades of "Incomplete" will not be given unless the student can demonstrate that near catastrophic events have led to a cause of extreme hardship.

# ASSESSMENTS

## Homework:

There will be several homework assignments, each designed to give students a chance to apply and practice the concepts learned in class. The possible points for each assignment vary based on the amount of material covered. Homework submitted via email will not be accepted. Students may discuss the homework with other students in the class but you must each turn in your own homework with your own computations and explanations written in your own words.

Caution: Anticipate the spending a minimum of 5 hours (and possibly up to 10 hours) to complete each homework assessment.

## Exams:

The midterm and final exams will cover the topics presented in the first and the second half of the semester, respectively. However, due to the cumulative nature of the course content, key concepts from earlier topics will be used in later parts of the course and thus may appear on both exams.

Both the midterm and the final exam will be administered in class. Students should bring a calculator to the exam. Calculators may not be shared. Cell phone calculators are not permitted. Exams are to be done completely independently; students found doing otherwise will be subject to the maximum university penalties. Tables will be provided by the instructor as needed. The exam date is listed in the course schedule portion of the course syllabus. You must be present and on time for the exams.

# ASSESSMENTS

## Submitting Assessments:

We will be using Dropbox to submit assignments this semester (<http://www.dropbox.com/>). Dropbox is a method of sharing files from one computer to another. This eliminates the need to email files back and forth. Emailed assignments will NOT be accepted. See the handout on Blackboard for how to download the Dropbox application, create a folder, and share the folder with me.

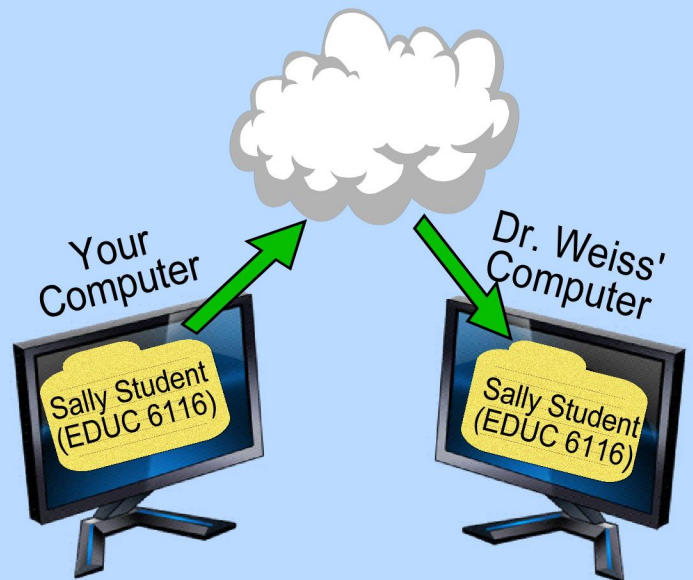
During the first week of the semester you should, 1) download and install Dropbox, 2) create a folder in Dropbox that includes your name on record at GW followed by the course number in parentheses. For example: Brandi Weiss (EDUC 6116), and 3) share the folder with me at ([weissba@gwu.edu](mailto:weissba@gwu.edu)).

When submitting ALL assignments please be sure you have followed the following directions. Any assignment that has not followed all of these guidelines will NOT be graded.

- The filename should include your name and the number of the homework. For example, "Brandi Weiss – Homework #1.doc".
- Each assessment should be submitted in a SINGLE file (i.e., do not use multiple files for homework and output). This means that you will need to copy and paste your SPSS output into the appropriate places of your assignment.
- The file must be in MS Word format. PDF files will not be accepted. No other file formats will be accepted. I will grade assignments using the comments feature in MS Word and may add typed comments directly into the document. I am unable to do this with pdf files, which is why I require you to submit the documents in MS Word.
- Please be sure to include your name on the cover page (i.e., first page) of the assignment.
- The SPSS output portion of your homework should be edited to only include the relevant information. This means that you should NOT include SPSS syntax, error messages, or extra tables/graphs from additional analyses that you have run.
- Be sure all tables, graphs, and text are visible. If anything is running off of the page that section will be counted as missing and you will be penalized the corresponding number of points.
- Assessments must be submitted by the beginning of class on the due date. Anything submitted after the start of class on the due date will be considered late. Refer to the course syllabus for the course late policy.

# DROPBOX

Dropbox is a method of sharing files from one computer to another. This eliminates the need to email files back and forth.



## Policy on Late Assessments:

Due dates for each assessment are listed on the course schedule. Assessments must be submitted on time for full credit. Assessments should be completed prior to the due dates indicated in the course syllabus and handed in promptly at the time specified for the course. If assessments are handed in late, they will be penalized 20% of the total possible credit if handed in within one week of the due date. If assessments are handed more than one week late they will not be graded and will not receive any credit. Time extensions for assignments will not be given except in cases of approved medical or family emergencies where accompanying written documentation is provided by the student. This documentation must be submitted to the instructor.

# ACCOMMODATIONS

## Missed Exams:

Due to the need for equity and classroom management, I must guard the security of all tests. No make-up examinations will be given without written documentation of a medical emergency or other excused University absence. If you are absent from class and wish to make-up work, you should provide me with a written note stating the date(s) of your absence, the reason for your absence, and the work that you are requesting to make-up. You should attach documentation of a university-approved reason for your absence and submit the note and the documentation to your instructor within one week of your return to class. Make-up exams may differ from the in-class exams

## Religious Accommodations:

It is the policy of The George Washington University that students not be penalized for participation in religious observances. Students shall be allowed, whenever practicable, to make up academic assignments that are missed due to such absences. It is the student's responsibility to contact the instructor for each course in which work is missed, and make arrangements for make-up work or examinations. Students are responsible for information and material missed on the day(s) of absence. The student is responsible for providing written notification to the professor within the two weeks of the semester. The notification must identify the religious holiday(s) and the date(s). The student shall hand the written notification to the instructor personally to avoid problems with collecting mail from mailboxes or e-mail. The process should be confidential. Since the final exam for this course will not yet be scheduled within the first week of class, please include any religious observances during final exam week in your written request. Work missed for any excused absence (i.e. due to religious observance, illness, etc.) must be made up within a timely manner. Any work missed should be made up within one week of the student's return to class, unless otherwise specified by the instructor.

## Academic Accommodations:

If you need academic accommodation by virtue of a documented disability, please contact the course instructor as soon as possible to discuss your needs. Students with documented needs for an accommodation must meet the same achievement standards required of all other students, although the exact way in which achievement is demonstrated may be altered. All requests for academic accommodations should be made during the first two weeks of the semester. Any student who may need an accommodation based on the potential impact of a disability should contact the Disability Support Services office at 202-994-8250 in the Marvin Center, Suite 242, to establish eligibility and to coordinate reasonable accommodations. For additional information please refer to: <http://gwired.gwu.edu/dss/>

# INTEGRITY

The George Washington University has a nationally recognized Code of Academic Integrity. As a student you are responsible for upholding these standards for this course. It is very important for you to be aware of the consequences of cheating, fabrication, facilitation, and plagiarism. Please review the University's policy on academic integrity, located at [www.gwu.edu/~ntegrity/code.html](http://www.gwu.edu/~ntegrity/code.html) All graded work must be completed in accordance with The George Washington University Code of Academic Integrity. Any student caught with unauthorized materials, or cheating in any other manner during exams or on assignments will be referred to the Academic Integrity Office, the student will be recommended for the maximum sanction which is to receive a grade of F on his or her transcript. In accordance with the Code of Academic Integrity, all sanctions shall be marked on the respondent's permanent record (i.e., transcript) with the phrase "Academic Dishonesty".

# EMAILS

I receive a plethora of emails on a daily basis from students. I try to respond to emails within 48 hours during the workweek, but please be patient. Please be aware that the number of emails I receive tends to increase exponentially before an assessment is due and as the end of the semester approaches. Thus it could take longer for me to respond to emails at those times.

FYI - I respond to course content emails Mon-Thur afternoons (i.e., not on the weekends).

I do not respond to emails that do not include a salutation, your name, and the course number (e.g, EDUC 6116). I teach multiple large classes a semester and work with many other students at the University, and I can't always remember what class you are in.

# ATTENDANCE

Your participation is crucial to your success in this course. Students are responsible for all course material presented in class and indicated in the course lecture notes or text. Some material presented in class may not be in the textbook, and vice versa. Additionally, handouts may be distributed during class which may not be posted on Blackboard.

If you miss class it is your responsibility to learn the material on your own, and it is your responsibility to acquire handouts for classmates. I will not hold private class sessions in my office for students who miss class, and I may not post all handouts on Blackboard.

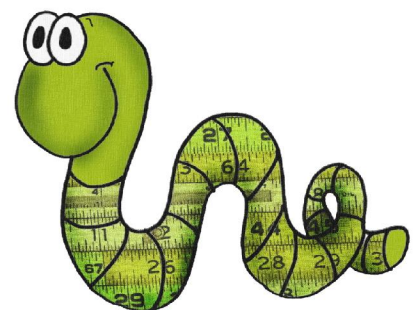
# TENTATIVE COURSE SCHEDULE

The topics listed for each class meeting on the following schedule are tentative and subject to change. The topics will most likely be covered in this order. However, depending on class time we may cover topics slightly earlier or later than the dates shown below. The due dates are also tentative and subject to change. The chapters and page numbers for the readings correspond with the Lomax (2012) recommended/optional textbook.

Week	Day	Date	Topics	Readings	Assessment Due
1	T	8/28	Introduction		
			Basic Concepts	Cha 1	
			Introduction / Frequency Distributions	Cha 2	
2	T	9/4	Graphs	Cha 2	
			Percentiles/Percentile Ranks	Cha 2	
3	T	9/11	Central Tendency	Cha 3	
			Variability	Cha 3	
4	T	9/18	Standard Scores	Cha 4	HW 1
			Normal Distribution	Cha 4	
5	T	9/25	Correlations	Cha 10	
			Simple Linear Regression		
6	T	10/2	Simple Linear Regression (continued if necessary)	Cha 17	HW 2
			Review		
7	T	10/9	Midterm (Through Regression)		Midterm
8	T	10/16	Sampling Distributions		
			Intro to Hypothesis Testing		
9	T	10/23	One-Sample z Test	pg 109-116	
10	T	10/30	One-Sample t Test	Cha 6	
11	T	11/6	Effect Sizes	Cha 6	
			Power	Cha 6	
			Confidence Intervals		
12	T	11/13	Independent t Tests	Cha 7 pg 248-251	HW 3
13	T	11/20	Dependent t Tests	Cha 7	
14	T	11/27	Research Design		HW 4
			Review		
15	T	12/4	Final Exam		Final

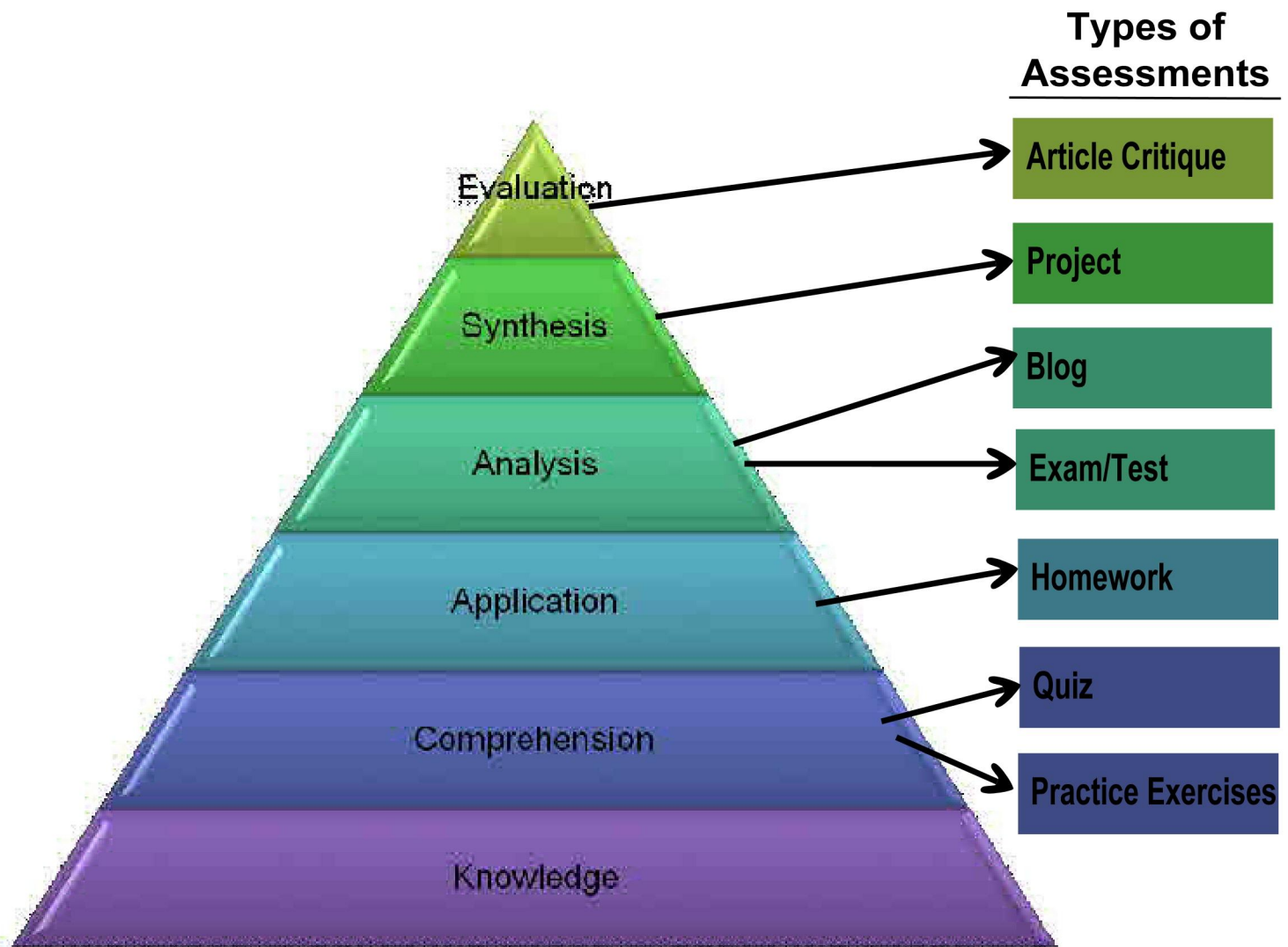
## Learning Objectives

You can find a detailed list of specific learning objectives on Blackboard. Refer to this list so that you know what you will be assessed on for this course. I recommend using the list of course specific learning objectives in conjunction with Bloom's Taxonomy when studying for exams and completing assessments for this course.



# Bloom's Taxonomy

Bloom's taxonomy is a tool for classifying subject matter learning objectives. The taxonomy is a guide to used to classify objectives according to their level of cognitive complexity. The lowest level of cognitive complexity is the Knowledge level, while the highest level is Evaluation. Learning objectives for this course (and other courses) can be classified using Bloom's Taxonomy.



**Evaluation** - Make judgments about the extent to which material satisfies criteria

**Synthesis** - Combine elements to form a new original entity

**Analysis** - Understand organizational structure of material; draw comparisons and relationships between elements

**Application** - Relate previously learned material to new situations

**Comprehension** - Explain or summarize in one's own words

**Knowledge** - Recognize facts, terms, and principles