Welcome to the course! This course will provide you with a brief introduction to data analysis with the goal to help you analyze the data you gather for your Action Research Project. In this sense, the class will be very hands-on, and it will require you to actively think about your Action Research project design in terms of the data you will obtain and how this data will be examined to answer your research questions. Please note, however, that you do NOT need to have a research project already underway or even planned! For this reason this class can be taken concurrently with Action Research (highly recommended!)

We will focus on numerical and graphical summaries of data (e.g. bar graphs, pie charts, scatterplots, etc.) and hypothesis testing. Upon completion of this course, students should be able to think critically about data and apply basic standard descriptive statistical procedures and basic hypothesis testing (e.g. using t-tests) to draw conclusions about data sets.

In order to practice with data summary and analysis, we will use real and manufactured data sets that I will provide for you. Because class content will be heavily based on data, it is very strongly encouraged to have access to software such as Microsoft Excel. We will have Excel in the computer lab but you will benefit from having it in your personal computer to complete homework assignments.

Instructor: Dr. Tania Leal
Email: tanial@unr.edu

South Oregon University
Summer Language Institute, Summer 2017
Guanajuato, Mexico
Tuesdays and Thursdays, 4:15 pm to 6:15 pm (July 18-Aug 3rd)
Objectives

At the end of the course, class participants will be able to:

- Identify whether variable data is quantitative or qualitative, continuous or discrete and the implications of these differences.
- Describe a variable distribution in a meaningful way using measures of central tendency and dispersion.
- Summarize quantitative data graphically, using a variety of graph types depending on the type of data involved.
- Explain the basic logic behind hypothesis testing.

Class components

1. Participation 10%
   Class activities will consist both of discussion of the topics and of practice in data analysis. Class attendance and participation is therefore very important and expected. Discussing the material from different angles serves an important purpose in the understanding and retention of the material. I expect you to come ready to contribute!

2. In-Class and Homework Assignments 55%
   In terms of assessment, the core of the class will consist of practical assignments that will be worked on both during class and as homework assignments. These assignments will include the creation of graphs and tables but also data summary and analysis.

3. Terminology Quizzes 15%
   We will have a couple of short quizzes based on the reading packets. These quizzes will focus on the terminology that we will cover in class.

4. Final Data Summary 20%
   This assignment will require you to analyze a data set and write out, as explained in class, the results in a clear and meaningful fashion, following APA style. This assignment will be a “dry run” of sorts of what will be required of you during your Action Research project.
Grading Scale:

Grades will not be assigned using a statistical curve, which means that your grade will be calculated using percentages. The percentages will be equivalent to the following letter grades:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
</tr>
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<tbody>
<tr>
<td>A</td>
<td>94-100%</td>
</tr>
<tr>
<td>A-</td>
<td>90-93%</td>
</tr>
<tr>
<td>B+</td>
<td>87-89%</td>
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<tr>
<td>B</td>
<td>84-86%</td>
</tr>
<tr>
<td>B-</td>
<td>80-83%</td>
</tr>
<tr>
<td>C+</td>
<td>77-79%</td>
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<tr>
<td>C</td>
<td>74-76%</td>
</tr>
<tr>
<td>C-</td>
<td>70-73%</td>
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<tr>
<td>D+</td>
<td>67-69%</td>
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<tr>
<td>D</td>
<td>64-66%</td>
</tr>
<tr>
<td>D-</td>
<td>60-63%</td>
</tr>
<tr>
<td>F</td>
<td>0-59%</td>
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</tbody>
</table>

Submitting Assignments and Receiving Feedback:

Unless otherwise noted, assignments should be submitted as MS Word (.docx) or Excel documents (.xlsx) which will be shared with me through Moodle. You will also submit your individual assignments through this platform. Please save assignments using this system: Lastname_AssignmentNameandNumber (e.g. Leal_Analysis1). I will make comments on your assignments. Once I do that, I will change the title so that you know it has been reviewed (I will add my initials (TL) to the file name). On occasion, I will also provide some editing assistance using the Track Changes function in MS Word. If you are unfamiliar with these functions, please read about them online, for instance here: http://www.wikihow.com/Edit-a-Document-Using-Microsoft-Word%27s-Track-Changes-Feature.

A NOTE ON WRITTEN WORK:

The last assignment (data summary) must be double-spaced with ample (one inch) margins so that I can add comments. Most submissions (unless noted) will be completed online, so make sure you have plenty of time in order to avoid computer trouble. In case there are any Internet issues, I will try to be flexible and accept written (i.e. printed) work—just make sure to check in with me before. I will only accept assignments through email in extreme situations—it is very difficult to keep track of these. Late work will be penalized 10% per day. After the third day, the work will receive zero points.

Attendance and Other Class Policies:

1. Attendance: Asistencia: Debido al formato intensivo del programa SLI, la puntualidad y la asistencia a clase son sumamente importantes. No se permite ninguna falta a clase. Cada ausencia bajará su nota por 10%. En el caso de enfermedad u otra emergencia, el estudiante debe consultar con la profesora y la directora del SLI.

2. Although the class is intense because of its tight time frame, I firmly believe it is essential that you maintain a positive and enthusiastic attitude both with your classmates and with me. I am always available through email should you have a question, but be mindful that email is not the best medium to discuss class content. Be ready to ask and answer questions about the readings every day! Reading for the class is essential to your understanding and retention of the material.

3. On class readings: Please use the study guide and follow it carefully. It is essential that you read before
the class (and, for the most part, you should have read this material even before the summer starts).

4. **Technology**: The use of computers (laptops, tablets, etc.) in class is welcomed BUT it should be considered a privilege. If I find students engaging with non-course related websites (Facebook, Snapchat, Twitter, Amazon, any shopping site…), the privilege will be revoked. Bringing your computer to class can be especially helpful when we are analyzing data. If you don't have access to a laptop, please do let me know before the summer starts.

**SCHEDULE**

**WEEK 1**

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic, readings</th>
<th>Assignment due</th>
</tr>
</thead>
</table>
| Tuesday, July 18 | **Data description: Types of data and summarizing techniques like measures of central tendency.**  
* Complete Reading packet 1 |                                                     |
| Thursday, July 20 | **More about central tendency and Data visualization: Displaying data for others**  
* Complete Reading packet 2  
* **Study for Quiz 1 (in class)** | Exercise set 1 (measures of central tendency)       |

**WEEK 2**

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic, readings</th>
<th>Assignment due</th>
</tr>
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| Tuesday, July 25 | **Study design and into to hypothesis testing. Analyzing data from Likert scales.**  
* Complete Reading packet 3 | Exercise set 2 (data visualization)                   |
| Thursday, July 27 | **Tools for comparing populations: T-tests**  
* Complete Reading packet 4  
* **Study for Quiz 2 (in class)** |                                                     |

**WEEK 3**

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic, readings</th>
<th>Assignment due</th>
</tr>
</thead>
</table>
| Tuesday, Aug 1 | **Exploring the relationship between two variables. Writing up results.**  
* Complete Reading packet 5  
* Quiz 2 (in class) | Exercise set 3 (comparing groups using t-tests)                   |
| Thursday, Aug 3 | **Putting it all together: summarizing data and a brief intro to qualitative data analysis.**  
* Complete Reading packet 6 | 2-page data write up                                      |