



DSO-599: INTRODUCTION TO PYTHON FOR BUSINESS ANALYTICS
Spring 2019, 1.5 Units
JKP 102, Tue/Thu 11:00am-12:20pm (for the first half of the semester)

Instructor: *Peng Shi*
Office: *Bridge Hall 303D*
Office Hours: *Fridays 2:00-3:00pm or by appointment. (If this time does not work for you, you can make an appointment by email to meet with me, but please give me at least 2 business days of advanced notice.)*
Phone: *(213) 821-1005*
Email: Peng.Shi@marshall.usc.edu

COURSE DESCRIPTION

This course equips a motivated student with little or no prior programming experience with a working knowledge of the Python programming language and the Pandas package, for the purpose of descriptive data analytics. These skills are foundational for anyone interested in a career in data science, and they are beneficial for every manager in today's data-rich economy.

Python is one of the world's most popular programming languages due to its simplicity, versatility, efficiency, and community support. Recent surveys have found it to be the most highly demanded programming language among job postings in data science. Pandas is a Python package that makes analyzing data easy, and it is widely used by data scientists at Google, Facebook, JP Morgan, and a host of other major companies.

More importantly than covering the technical tools, this course focuses on how to apply the tools for business applications. We will discuss how to ask the right questions that leads to business insights, and how conduct the right analysis that takes into account the needs and preferences of the relevant stakeholders. Datasets and applications are taken from a variety of industries, including healthcare, entertainment, hospitality, digital platforms, and governments. During class, students learn by solving mini business problems using Python on their own computer under the guidance of the instructor. Students also work in teams to complete a capstone project in which they produce business insights from a dataset of their choice, and the project can be used to showcase their analytics skills to future employers.

COURSE OBJECTIVES

Upon successful completion of the course, students will be able to

1. **Predict** the result of a given piece of Python code.
2. **Write** Python code to read, write, filter, merge, summarize, and graph a given dataset.
3. **Analyze** data from a variety of industries and uncover business insights.
4. **Communicate** effectively the purpose, methodology, and result of an analysis involving Python to a non-technical business audience.

COURSE MATERIALS

The course will rely heavily on the following two textbooks:

- Chapters 1-9 of “Python for Everybody” by Charles R. Severance, available at <https://www.py4e.com/book.php>. (Both the PDF and HTML versions are free.)
- Chapters 1-10 of “Pandas for Everyone” by Daniel Y. Chen, available for purchase on Amazon.com or Pearson.com. (Cost is around \$30 for the print edition.)

Datasets and additional readings will be posted on Blackboard at least one week before they are used. If you have any questions or need assistance with the Blackboard Course Pages, please contact the Marshall HelpDesk at 213-740-3000 or HelpDesk@marshall.usc.edu.

PRE-REQUISITES

While no prior programming experience is assumed, students are expected to be able to proficiently operate a word processor, web browser, and to save files from the Internet and organize them into folders.

This course also requires students to have access to a laptop that they can bring to class with Python 3, Jupyter notebook, and the Pandas package installed. All of these are available via installing the latest Miniconda or Anaconda distribution for Python 3.X, available at <https://conda.io/docs/user-guide/install/index.html>. **You should complete the installation as soon as possible, preferably before the first class session.** Using Miniconda or Anaconda to install Python, Jupyter and Pandas, rather than using another method, will minimize technical difficulties.

COMMUNICATION POLICY

I am committed to respond to your email within 24 hours if it is received on a business day during 9am-5pm. If it is received in the evenings or on the weekends, then I will treat the email as if it was received at 9am the following business day, and respond within 24 hours from then. (For example, for an email received on Monday at 3pm, I will respond by Tuesday at 3pm. For an email received at Monday at 6pm, I will respond by Wednesday at 9am. For an email received on the weekend between Friday 5pm and Monday 9am, I will respond by Tuesday 9am. If it were a long weekend and Monday is a holiday, then I will respond by Wednesday 9am.)

CLASSROOM POLICY

Students are expected to have completed all of the designated readings before class. Learning programming requires repeated exposure and practice, so it is recommended that you not only read the textbooks but also follow the code tutorials in them by typing the Python commands yourselves on a computer as you read.

Students should bring a computer to each class, but should only use it during the time allotted for the hands-on coding activity. During all other times, students should close all laptops and refrain from using cell-phones or tablets. When computer use is not allowed, students should take notes by hand using paper. Throughout the duration of the class, students should not access Facebook, YouTube, Twitter, Instagram, or any other website that is not related to the course. **Each violation of the above policy will result in a point deduction to one’s “In-class work.”**

GRADING

Your final grade will be based on your absolute performance with respect to the following criteria and weights, as well as on your relative performance compared to other students taking the course. The target average GPA for this course is 3.5.

<u>Assignments</u>	<u>Points</u>	<u>% of Overall Grade</u>
In-class Work	14	14%
Quizzes	6	6%
Coding Assignments	20	20%

Project Proposal	10	10%
Project Deliverable	25	25%
Final Exam	25	25%
TOTAL	100	100%

IN-CLASS WORK

Starting from the second class, students will complete hands-on mini-assignments in class, in which they apply the skills learned to various business settings. These mini-assignments are to be submitted on Blackboard before the start of the next class session, and grading is by timely completion only.

QUIZZES

There will be two 15-minutes quizzes held at the beginning of class, each worth 3%. Students are allowed to use any paper books or notes for the quiz, but no electronic devices (laptops, cellphones or tablets) are allowed. The quizzes are designed to assess course learning objectives 1 and 2 (predicting the result of given Python code or to write code related to data analytics). The questions for quizzes are analogous to those given in Interviews involving data Analytics. The dates of quizzes are listed in the schedule at the end of the syllabus. No rescheduling of quizzes is allowed. If you miss a quiz, the weight will be automatically transferred to the final exam.

CODING ASSIGNMENTS

There are two individual assignments that focus on learning objective 2 (ability to write Python code). The assignments are worth 10% each and are based on the following business applications.

- **Assignment 1: Streamlining Healthcare Operations by Automating a Decision Rule.** Studies have shown that healthcare outcomes can improve if the health provider can streamline its operations using precise decision rules to reduce human error. This can also improve the operational efficiency and lower the strain on limited time of doctors and nurses. In this assignment, you will use basic Python constructs to build an automated tool that triages an incoming patient by asking a series of questions to determine the appropriate next step.
- **Assignment 2: Analyzing Data from Customer Reviews.** One challenge for marketing and sales teams is to analyze large amounts of unstructured text data, such as customer reviews. In this assignment, you will apply your understanding of basic data structures in Python and Pandas to read a large file of free text input and extract repeated words, while counting their numbers of occurrences. You will output the results in a structured table that is more amenable to future analysis. This is similar to the “highlights” feature in Yelp.

TEAM PROJECT

Students will be assigned into teams of about 3-4 students by the instructor and will work in their own time outside of class to complete a Python “code portfolio” that they can show future employers to demonstrate their proficiency. Each portfolio should consist of one or more Jupyter notebooks posted on Github, and should focus on analyzing a particular set of data to uncover business insights. The analysis will not only be graded based on the use of Python, but also on the logic, presentation, rigor, and business relevance. Students are encouraged to find their own datasets rather than using those from in-class activities. There are three deliverables for the team project:

- Proposal (10%): a Jupyter notebook describing the dataset, basic descriptive features of the data, and a plan for more in-depth analysis. The notebook should clearly describe the purpose, methodology, and anticipated result of the analysis to a non-technical business audience.
- Final deliverable (25%): the completed portfolio, composed of one or more Jupyter notebooks. They should be written with a target audience of a manager in a relevant company

and should be written with clear descriptions and explanations that are understandable to a non-technical audience.

With the submission of the final deliverable, each individual will complete a survey describing his or her own contribution to the project, as well as a breakdown of the percentage of total work performed by each person in the team. The breakdown must add up to 100% and must include yourself. This will be used to adjust individual grades if certain members contributed little. Detailed instructions and grading rubric for each deliverable will be posted on Blackboard well before they are due. The team project assesses course learning objectives 2, 3, and 4 (writing Python code, analyzing data, and communicating to a non-technical audience.)

FINAL EXAM

There will be a 75-minute exam during the last class session. The exam is open book and open notes, but no electronic device is allowed, including laptops, cellphones, and tablets. Types of questions may include commenting on the logic of a certain data analysis, predicting the output of code samples, as well as completing code segments. Learning to code on paper without the feedback of a computer will advance your coding abilities and will be useful for certain interviews in the future. The exam is worth 25% of your total grade and assesses course learning objectives 1, 2, and 3 (predicting outputs, writing code, and analyzing data).

EXAM RESCHEDULING

Students must attend the final exam at the indicated time and date. If you foresee a conflict, you must contact the professor within the first two weeks of the semester to explore alternative options. No rescheduling of exam will be allowed after the first two weeks of class. The only exception is a documented medical or family emergency, for which the student must either provide a signed doctor's note with the name and phone number of the medical professional verifying the medical emergency, or have a professional counselor contact the professor directly verifying the nature and seriousness of the emergency. For all other reasons of missing the exam, including travels for non-emergencies, interviews, adverse traffic conditions, or forgetfulness about exam time, the student will not be allowed to reschedule and will receive a zero for the exam.

LATE SUBMISSIONS POLICY

Assignments must be submitted electronically via Blackboard before it is due. If your internet breaks down on the due date, you must deliver a hard copy printout at the beginning of class on that day. If you are unable to attend class on that day, make arrangements for it to be delivered to the classroom or to my office by the start of class. **There is an automatic 10% deduction for any late assignment, even if it is late only by a few minutes. For every 12 hours of additional lateness, there is an additional 10% deduction.** (The Blackboard timestamp is the definitive authority that we use for submission time.) For example, a project proposal that would have gotten a grade of 85% that is five minutes late will receive a grade of 75%. If it is 13 hours late, it will receive a grade of 65%. If it is 25 hours late, it will receive a grade of 55%. The deductions continue until the grade reaches zero.

RE-GRADING POLICY

I will do my best to make my expectations for the various assignments clear and to evaluate them as fairly and objectively as I can. If you feel that an error has occurred in the grading of any assignment, you may, within one week of the date the grade is assigned, write me a memo in which you explain fully and carefully why you think the assignment should be re-graded. Be aware that the re-evaluation process can result in three types of grade adjustments: positive, none, or negative.

TEAM WORK

For any career related to business analytics, it is important that you work well in teams. Most teams in the workplace are assigned by others rather than chosen by team members. Therefore, you must learn to work effectively in the assigned teams. The teams for the final project are designed to maximize diversity of background and expertise and will be announced on Blackboard. The team assignments may be imperfect but you must work with it. The instructor will not act as an intermediary in any team disputes; you must learn to work out differences among yourselves.

THE IMPORTANCE OF COURSE EVALUATIONS

This course is continuously improved, based on feedback from students and instructor observations. Please participate in the midterm and end-of-term course evaluations online. Your feedback is essential to ensuring that Marshall meets student needs. Your instructor will read each evaluation carefully and address the feedback in future iterations of the course.

STATEMENT ON ACADEMIC CONDUCT AND SUPPORT SYSTEMS

Academic Conduct:

Plagiarism – presenting someone else’s ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in *SCampus* in Part B, Section 11, “Behavior Violating University Standards” policy.usc.edu/scampus-part-b. Other forms of academic dishonesty are equally unacceptable. See additional information in *SCampus* and university policies on scientific misconduct, <http://policy.usc.edu/scientific-misconduct>.

Although students may discuss the individual coding assignments, students are expected to write their codes independently, so as to avoid involuntary plagiarism. No communication between students is tolerated during a quiz or an exam. Any suspicion of plagiarism or cheating will be reported and investigated. Students are encouraged to report any suspicious behavior of peers; the identity of the student who reports cheating will be held confidential. **Any documented act of plagiarism or cheating will result at a minimum in a failing grade of “F” for all responsible parties and accomplices, and depending on the result of the investigation, may also result in higher penalties such as suspension or expulsion.** In order to uphold the academic integrity of the university, such disciplinary actions will be executed without mercy on the first violation.

Students with Disabilities:

USC is committed to making reasonable accommodations to assist individuals with disabilities in reaching their academic potential. If you have a disability which may impact your performance, attendance, or grades in this course and require accommodations, you must first register with the Office of Disability Services and Programs (www.usc.edu/disability). DSP provides certification for students with disabilities and helps arrange the relevant accommodations. Any student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. **This letter must be delivered to the professor by the end of the third week of class in order to apply accommodations for this course.** DSP is located in GFS (Grace Ford Salvatori Hall) 120 and is open 8:30 a.m.–5:00 p.m., Monday through Friday. The phone number for DSP is (213) 740-0776. Email: ability@usc.edu.

Support Systems:

Student Counseling Services (SCS) - (213) 740-7711 – 24/7 on call

Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention. <https://engemannshc.usc.edu/counseling/>

National Suicide Prevention Lifeline - 1-800-273-8255

Provides free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week. <http://www.suicidepreventionlifeline.org>

Relationship & Sexual Violence Prevention Services (RSVP) - (213) 740-4900 - 24/7 on call

Free and confidential therapy services, workshops, and training for situations related to gender-based harm. <https://engemannshc.usc.edu/rsvp/>

Sexual Assault Resource Center

For more information about how to get help or help a survivor, rights, reporting options, and additional resources, visit the website: <http://sarc.usc.edu/>

Office of Equity and Diversity (OED)/Title IX compliance – (213) 740-5086

Works with faculty, staff, visitors, applicants, and students around issues of protected class. <https://equity.usc.edu/>

Bias Assessment Response and Support

Incidents of bias, hate crimes and microaggressions need to be reported allowing for appropriate investigation and response. <https://studentaffairs.usc.edu/bias-assessment-response-support/>

USC Support & Advocacy – (213) 821-4710

Assists students and families in resolving complex issues adversely affecting their success as a student EX: personal, financial, and academic. <https://studentaffairs.usc.edu/ssa/>

Diversity at USC – <https://diversity.usc.edu/>

Tab for Events, Programs and Training, Task Force (including representatives for each school), Chronology, Participate, Resources for Students

USC Emergency Information

Provides safety and other updates, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible. emergency.usc.edu

USC Department of Public Safety – UPC: (213) 740-4321 – HSC: (323) 442-1000 – 24-hour emergency or to report a crime.

Provides overall safety to USC community. dps.usc.edu

Grade Disputes:

All grades assigned by faculty members are final. Students have the right to seek explanation, guidance, counsel and reasons for the assignment of a grade. Faculty may initiate a change in grade if there is an error in the calculation of a grade. Students may appeal a grade according to university policy as set forth in SCampus. A faculty member may not change a disputed grade outside the formal appeals process. In response to a disputed academic evaluation by an instructor, a student is entitled to two levels of appeal after review by the instructor: first to the chairperson of the department and then to the appropriate dean of the school. The full university policy can be found in SCampus under University Governance / Academic Policies at <https://policy.usc.edu/scampus-part-c/>.

COURSE OUTLINE AND ASSIGNMENTS

This course is organized into four modules. Each module corresponds to a series of business questions, which motivate the in-class work and coding assignment for that module.

MODULE I. Programming Logic (Sessions 1-4)

How does a computer program work? This module presents a primer on the building blocks of a program and how to logically sequence the components to perform a complex task. The module culminates in assignment 1, in which you apply these tools to improve healthcare operations.

Business Questions:

- How to break down a complex task into well-defined steps? (This problem occurs in every aspect of business and training in “programming thinking” helps a lot.)
- How to automate manual tasks to improve operational efficiency and reduce human error?
- How to bridge the language barrier between business executives and computer engineers?

Session 1 – Introduction to Programming

- Pre-class reading: Chapter 1 of “Python for Everybody” by Charles Severance.
- Due before class: Pre-course survey (link on Blackboard)
- Learning Objectives:
 - Describe the building blocks of a Python program.
 - Type and run a Python program within Jupyter notebook.
 - Describe various types of errors and how to debug.
 - Identify the business goal of an application of business analytics.

Session 2 – Variables, Statements and Conditional Execution

- Pre-class reading: Chapters 2 and 3 of “Python for Everybody” by Charles Severance.
- Learning Objectives:
 - Store intermediate outputs in variables.
 - Describe common variable types and determine the type of a variable.
 - Use Python for computing arithmetics.
 - Use if statements to control the flow of execution.

Session 3 – Functions

- Pre-class reading: Chapters 4 of “Python for Everybody” by Charles Severance.
- Learning Objectives:
 - Load and read documentation for built-in functions and call them.
 - Define own function with proper syntax.
 - Use common built-in functions such as type, max, min, len, and type conversions.

Session 4 – Iterations

- Pre-class reading: Chapters 5 of “Python for Everybody” by Charles Severance.
- Learning Objectives:
 - Simplify repetitive code using for and while loops.
 - Controlling programmatic flow within loops using break and continue.

MODULE II. Data Structures (Sessions 5-8)

How should data be stored in a particular business setting and what are the tradeoffs involved? This module introduces you to the fundamental data structures in Python and Pandas. You will make use

of all of them in Assignment 2, in which you write a program to extract insights from large amounts of customer reviews.

Business Questions:

- How to store a particular kind of business data to make the analytics efficient?
- How to analyze large amounts of unstructured text data?
- What are the relevant slices of data for a given business decision and how to retrieve the important parts and filter out the rest?

Session 5 – Strings and Files

- Pre-class reading: Chapters 6 and 7 of “Python for Everybody” by Charles Severance.
- Due before class:
 - Coding Assignment 1 (Streamlining healthcare operations by automating a decision rule)
 - Quiz 1 will take place in the first 15 minutes of class and will cover contents from sessions 1-4.
- Learning Objectives:
 - Parse a text files and store the relevant part into strings.
 - Slice, manipulate and format strings.
 - Define a Python object and describe the meaning of the dot notation.

Session 6 – Lists and Dictionaries

- Pre-class reading: Chapters 8 and 9 of “Python for Everybody” by Charles Severance.
- Learning Objectives:
 - Define and manipulate Python lists and dictionaries.
 - Describe the differences between lists, dictionaries and tuples.
 - Use a Python dictionary to perform word counts.

Session 7 – Pandas DataFrame Basics

- Pre-class reading: Chapter 1 of “Pandas for Everyone” by Daniel Chen.
- Learning Objectives:
 - Load a simple delimited data file.
 - Count how many rows and columns were loaded.
 - Determine which type of data was loaded.
 - Examine different parts of the data by subsetting rows and columns.

Session 8 – Pandas Data Structure

- Pre-class reading: Chapter 2 of “Pandas for Everyone” by Daniel Chen.
- Learning Objectives:
 - Load in manually created data.
 - Describe the basic properties and operations of the Series and DataFrame objects.
 - Create a subset of the data via fancy slicing and indexing.
 - Save data from a Pandas object into a file.

MODULE III. Basic Analysis (Sessions 9-11)

A significant amount of time spent by entry-level data analysts is in gathering messy, incomplete data from various sources and assembling them into a coherent dataset, as well as drawing simple plots to describe the data. This module introduces the basic techniques in Pandas for plotting, assembling, and

handling missing data. You have the opportunity to practice these skills when assembling a suitable dataset for the team project, and writing your project proposal, which is due at the end of the module.

Business Questions:

- How to tell compelling stories using data and plots?
- For a given business decision, what data might be helpful and where to find them?
- How to integrate data from various sources?
- What to do about missing data?

Session 9 – Introduction to Plotting

- Pre-class reading:
 - Chapter 3 of “Pandas for Everyone” by Daniel Chen.
 - “Pandas Dataframe: Plot Examples with Matplotlib and Pyplot” (posted on Blackboard)
 - “The Challenger: an information disaster” (posted on Blackboard)
- Due before class:
 - Coding Assignment 2 (Analyzing Data from Customer Reviews)
 - Quiz 2 will take place in the first 15 minutes of class and will cover contents from sessions 5-8.
- Learning Objectives:
 - Describing the various packages for plotting in Python and their relationships.
 - Creating line plots, scatter plots, bar plots with matplotlib and Pandas and customizing the formatting.
 - Creating histograms, density plots, regression plots, pairwise plots, and faceted plots with seaborn.

Session 10 – Data Assembly

- Pre-class reading: Chapter 4 of “Pandas for Everyone” by Daniel Chen.
- Learning Objectives:
 - Define the term “tidy data.”
 - Concatenating data in Pandas.
 - Merging multiple DataFrames.

Session 11 – Missing Data

- Pre-class reading: Chapter 5 of “Pandas for Everyone” by Daniel Chen.
- Learning Objectives:
 - Describe how missing data is represented in Pandas.
 - Describe how missing values are created in data processing.
 - Recoding and making calculations with missing values.

MODULE IV. Data Munging (Sessions 12-14)

Data munging, also known as data wrangling, is the process of transforming raw data into another format with the intent of making it more appropriate for analysis. It is the bread and butter of a data analyst and learning to do this efficiently can give you an enormous edge.

Business Questions:

- How to efficiently transform and aggregate large amounts of data in the least amount of coding time?

- How to clean the mess in the data to identify the underlying story?

Session 12 – Tidy Data and Data Types

- Pre-class reading: Chapter 6-7 of “Pandas for Everyone” by Daniel Chen.
- **Due before class:** Project proposal Jupyter notebook.
- Learning Objectives:
 - Using the melt and split functions to reorganize data.
 - Loading multiple data files automatically.
 - Identify the data types of columns in a Dataframe.
 - Converting between various data types.
 - Manipulating categorical data types.

Session 13 –Text Data

- Pre-class reading: Chapters 8 of “Pandas for Everyone” by Daniel Chen.
- Learning Objectives:
 - Using Pandas string methods to manipulate columns containing text.
 - Transforming strings into the desired format.
 - Using regular expressions to search for a pattern.

Session 14 – Pandas Apply and Groupby Operations

- Pre-class reading: Chapter 9-10 of “Pandas for Everyone” by Daniel Chen.
- Learning Objectives:
 - Applying a custom function over columns or rows.
 - Using pre-made Pandas functions over columns or rows.
 - Describe the “split-apply-combine” framework for data transformation.
 - Using the “groupby” operation to implement the above in Pandas.

Session 15 – Review

- Learning Objectives:
 - Practice solving questions similar to those in the exam.
 - Describe how everything learnt in the course fit together.

Session 16 – Final Exam

Due on Friday 3/1 at 6pm Pacific Time: Final project deliverable.

COURSE OUTLINE AND ASSIGNMENTS (SUMMARY TABLE)

	Module	Topic	Pre-class Readings	Assignments Due
Session 1 (Tue 1/8)	I. Programming Logic	Introduction to Programming	PY4E Ch. 1	Pre-class survey
Session 2 (Thu 1/10)		Variables, Statements and Conditional Execution	PY4E Ch. 2-3	Assignment 0
Session 3 (Tue 1/15)		Functions	PY4E Ch. 4	
Session 4 (Thu 1/17)		Iterations	PY4E Ch. 5	
Session 5 (Tue 1/22)	II. Data Structures	Strings and Files	PY4E Ch. 6-7	Assignment 1, Quiz 1
Session 6 (Thu 1/24)		Lists and Dictionaries	PY4E Ch. 8-9	
Session 7 (Tue 1/29)		Pandas DataFrame Basics	PD4E Ch. 1	
Session 8 (Thu 1/31)		Pandas Data Structure	PD4E Ch. 2	
Session 9 (Tue 2/5)	III. Basic Analysis	Introduction to Plotting	PD4E Ch. 3, Additional readings on Blackboard	Assignment 2, Quiz 2
Session 10 (Thu 2/7)		Data Assembly	PD4E Ch. 4	
Session 11 (Tue 2/12)		Missing Data	PD4E Ch. 5	
Session 12 (Thu 2/14)	IV. Data Munging	Tidy Data and Data Types	PD4E Ch. 6-7	Project Proposal
Session 13 (Tue 2/19)		Text Data	PD4E Ch. 8	
Session 14 (Thu 2/21)		Apply and Groupby Operations	PD4E Ch. 9-10	
Session 15 (Tue 2/26)		Exam Review		
Session 16 (Thu 2/28)	Final Exam (In Class)			Project Deliverable due 6pm Friday 3/1.

- **PY4E** denotes the textbook “Python for Everybody” by Charles Severance.
- **PD4E** denotes the textbook “Pandas for Everyone” by Daniel Chen.
- The **in-class work** for each session is due on Blackboard before the next session.

After carefully reviewing the above syllabus, please complete the following and return a hard copy to the instructor by the second week of class.

Acknowledgement of Understanding

I, _____, USC # _____, hereby acknowledge that I have carefully reviewed the DSO 599 (Introduction to Python for Business Analytics) syllabus in Spring 2019 and that I fully understand and agree to the policies written therein. Specific policies include:

- Any documented act of plagiarism or cheating for an assignment or a test will result, at a minimum, in a failing grade of F for the course with no option of withdrawal for all responsible persons. The penalty will be applied without mercy upon the first offence.
- No exam rescheduling is allowed after the first two weeks of class. Except for documented medical or family emergencies, missing the exam will result in a grade of zero.
- DSP students must provide the instructor with the official letter of verification by the third week of class for any accommodations to be applied for this course.
- No use of laptops, tablets, and cellphones during class session outside of allotted times. Accessing websites unrelated to the course during class will result in grade reductions as outlined in the Syllabus.
- Although discussion among students is allowed, all coding assignments must be written up individually.
- Any late assignment, even by a few minutes, will be subject to the reductions in grade described in the Syllabus.
- No adjustment of grades for any graded work unless the student submits a memo describing the reasons for regrading within one week of the grade being assigned.
- The teams for the final assignment will be assigned by the instructor. The instructor will not act as an intermediary for team disputes during the course. At the end of the course, each team member will complete a reflection survey as outlined in the syllabus, which will be used to adjust individual grades if needed.

Signature: _____

Date: _____