



**QUINLAN**  
SCHOOL of BUSINESS

**Analysis of Big Data in Python – FINC 599**  
**Summer Quarter, 2018**

**Class Times/Room:** Saturdays: 1-4 pm / Lecture (SC 302)

**Instructor:** Elliott Lorenz

**Office Hours:** Saturday 12-1 pm, or by appointment.

**Email:** elorenz2@luc.edu

**Description:** This course focuses on methods and techniques for analyzing and solving problems involving big data in the programming language Python. The first half of the course will focus on developing solid programming fundamentals in Python. The second half of the course will utilize these skills to solve big data problems in finance.

**Required Text:** Introduction to Python for Econometrics, Statistics and Data Analysis, by Kevin Sheppard ([https://www.kevinsheppard.com/images/0/09/Python\\_introduction.pdf](https://www.kevinsheppard.com/images/0/09/Python_introduction.pdf)). Students are *strongly encouraged* to browse through chapters 3, 4, 5, 6, 11, 13, & 18 within the first two weeks of class. This will be used for the first half of the course; no text is required for the second half.

**Homework:** I will ask you to complete four equally-weighted homework assignments, which I will post on Sakai at least one week before they are due. Completed assignments must be submitted before class begins via Sakai; due dates appear on the course schedule below. You may complete the homework independently, or you can work with up to two classmates. [Groups larger than 3 are not allowed.] If you work in a team, please submit only one team assignment and be sure to include all group member names on the assignment.

**Midterm Exam:** The midterm exam will test coding skills (reading and writing code). You may bring one double-sided 8 ½” by 11” sheet of notes to the midterm exam. The test will be administered on paper, and no use of electronics will be permitted.

**Final Project:** The final project will involve analyzing real-world big data. Students will work in teams of up to 3. A class presentation and final write-up are required.

**Grades:** Course grades will be determined by weighting class activities as follows.

Class Participation: 10%  
Homework 20%  
Midterm Exam: 30%  
Final Project: 40%

Final course grades are assigned based on the following grid.

A	93 or above		
A-	90.0 – 92.9		
B+	87.0 – 89.9	C+	77.0 – 79.9
B	82.0 – 86.9	C	73.0 - 76.9
B-	80.0 – 81.9	C-	68.0 – 72.9

**Learning Outcomes:** By the end of this course, you should be able to:

1. Write simple Python programs with good coding technique; and
2. Use Python to analyze and explore big financial data.

## Course Outline

Date	Topic	Text Chapters	Homework
May 19	Introduction to Python; course intro, python intro, software setup, and basic principles	1, 5, 6	
June 2	Data types, data structures, logical operators, control flow	3, 11, 13	1
June 9	Functions & modules	4, 18	2
<b>TBD</b>	Problem solving in Python; tying together all previous topics		3
June 23	File manipulation; cleaning data; introduction to data science libraries; review for midterm		
June 30	<b>Midterm Exam; final project data sets assigned</b>		
July 7	Introduction to predictive modeling; common pitfalls in big data analysis		4
July 14	Applications in predictive modeling; final project problem solving		
<b>Wednesday July 18, 6-9pm</b>	Lessons in big data analysis; course summary; career advice; final project prep		
July 28	<b>Final projects due; presentations given today</b>		

\* This schedule is subject to change.

## Quinlan School of Business Policies

### **Attendance**

Class attendance and participation are fundamental components of learning, so punctual attendance at all classes, for the full class meeting period, is expected of Quinlan students. Faculty may set participation policies unique to their courses and use class participation as a component of the final grade. The student is responsible for any assignments or requirements missed during an absence.

### **Make-Up Examinations**

Loyola University academic policy provides that tests or examinations may be given during the semester or summer sessions as often as deemed advisable by the instructor. Because Quinlan faculty believe examinations represent a critical component of student learning, required examinations should be taken during the regularly scheduled class period. **Make-up examinations are discouraged.** Exceptions may be granted only by the faculty member or department chair, and only for unavoidable circumstances (illness verified by a signed physician's note, participation in intercollegiate athletic events, subpoenas, jury duty, military service, bereavement, or religious observance). A make-up final examination may be scheduled only with the permission of the appropriate Quinlan Assistant or Associate Dean.

If a make-up examination must be given, it is the responsibility of the faculty member to prepare, schedule, and proctor the exam. The only regular exception is for a student athlete, who may use the testing services of the Athletics Department to complete a make-up examination. For a student with a documented special testing need, please consult University policy concerning use of the testing center in Sullivan Center at Lake Shore Campus.

### **Academic Integrity**

All members of the Quinlan School shall refrain from academic dishonesty and misconduct in all forms, including plagiarism, cheating, misrepresentation, fabrication, and falsehood. Plagiarism or cheating on the part of the student in individual or group academic work or in examination behavior will result minimally in the instructor assigning the grade of "F" for the assignment or examination. In addition, all instances of academic dishonesty must be reported to the chairperson of the department involved.

For further information about expectations for academic integrity and sanctions for violations, consult the complete Quinlan School of Business Honor Code and Statement of Academic Integrity on the Quinlan website:

<http://luc.edu/media/lucedu/quinlan-graduate/pdfs/Honor-Code-Quinlan-July2012.pdf>