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Department of Finance  
McCombs School of Business, University of Texas at Austin

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Finance 397 # 04060  
**FINANCE WITH PYTHON**  
Quantitative Methods for Investment Analysis

Spring 2021  
Tuesday & Thursday at 11:00–12:30pm

### People

Instructor

Jan Schneider

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CBA 6.272

Office hours: by appointment on Zoom

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### Content

This course introduces students to a modern quantitative approach to investing implemented in Python. The class is for you if (A) you would like to learn quantitative finance (using Python as a tool) or (B) you would like to learn how to program in Python (with finance applications as examples). Our main focus in this class will be to extract data from financial statements and then use these data to backtest quantitative trading strategies.

## Class Material

We will analyze financial data with Python in JupyterLab.

JupyterLab is a (free) open-source environment made for interactive computing with data.

JupyterLab runs in your browser (Firefox, Chrome or Safari). Before each class I will post a Jupyter notebook at

[www.janschneider.website/teaching/financewithpython.html](http://www.janschneider.website/teaching/financewithpython.html)

Please download these notebooks so that we can work through them together in class. To access the notebooks you need to install Anaconda on your computer:

1. go to <https://www.anaconda.com/> and select *Download*
2. download the most recent Python version (currently 3.8),
3. open the file you just downloaded and follow the guided Installation.

After you installed Anaconda:

1. download the current notebook from the class website,
2. open Anaconda and launch JupyterLab,
3. open the notebook in JupyterLab.

## Grading

Class participation counts 10% towards your grade.

We will have weekly multiple choice quizzes on Canvas that count 20%.

We will have one final project that counts 70%.

## Outline of Topics

Topics:

- Introduction to Python
- Accessing financial statement data from the SEC
- Backtesting asset class allocation strategies
- Backtesting quantitative security selection

## University Policies

### **Sharing of Course Materials is Prohibited**

Sharing of Course Materials is Prohibited: No materials used in this class, including, but not limited to, lecture hand-outs, videos, assessments (quizzes, exams, papers, projects, homework assignments), in-class materials, review sheets, and additional problem sets, may be shared online or with anyone outside of the class unless you have my explicit, written permission. Unauthorized sharing of materials promotes cheating. It is a violation of the University's Student Honor Code and an act of academic dishonesty. I am well aware of the sites used for sharing materials, and any materials found online that are associated with you, or any suspected unauthorized sharing of materials, will be reported to Student Conduct and Academic Integrity in the Office of the Dean of Students. These reports can result in sanctions, including failure in the course.

### **Class Recordings**

Class recordings are reserved only for students in this class for educational purposes and are protected under FERPA. The recordings should not be shared outside the class in any form. Violation of this restriction by a student could lead to Student Misconduct proceedings.

### **Classroom Safety**

We will all need to make some adjustments in order to benefit from in-person classroom interactions in a safe and healthy manner. Our best protections against spreading COVID-19 on campus are masks (defined as cloth face coverings) and staying home if you are showing symptoms. Therefore, for the benefit of everyone, this means that all students are required to follow two important rules.

Every student must wear a cloth face covering properly in class and in all campus buildings at all times.

Every student must engage in documented daily symptom screening. This means that each class day in which on campus activities occur, students must upload certification from the symptom tracking app and confirm that they completed their symptom screening for that day to Canvas. Students should not upload the results of that screening, just the certificate that they completed it. If the symptom tracking app recommends that the student isolate rather than coming to class, then students must not return to class until cleared by a medical professional.

If a student is not wearing a cloth face covering properly in the classroom (or any UT building), that student must leave the classroom (and building). If the student refuses to wear a cloth face covering, class will be dismissed for the remainder of the period, and the student will be subject to disciplinary action as set forth in the university's Institutional Rules/General Conduct 11-404(a)(3). Students who have a condition that precludes the wearing of a cloth face covering must follow the procedures for obtaining an accommodation working with Services for Students with Disabilities.

Other guidelines:

Students in A/B cohort classes should attend their in-person section only on the day and at the time that they are scheduled to attend. Students should not alter the layout of a classroom under any circumstances from its original configuration that is designed to maintain social distancing guidelines.

Students should remain outside the building until the passing time prior to their designated class time. Use designated campus study areas as needed.

Consumption of food and drink is not allowed in classrooms or public areas of university buildings except for designated break areas.

Enter the building at the designated entrances. Use the hand sanitizer as provided or your own personal hand sanitizer after entering the building.

Follow the corridor and stairway directional signage where applicable, maintain proper social distancing and noted paths of travel.

All physically-able students should use stairs whenever possible. If an elevator is required there should be no more than the number of occupants noted on the elevator signage in the elevator at a time, maintaining social distancing. All classroom doors should remain propped open before, during, and after class if it is not disruptive. This decision is at the discretion of the instructor using the classroom.

Students should enter the classroom at the designated entrance and fill the room by row from the first row to the last row and from the seat furthest from the entrance to the seat closest.

Only specific seats in classrooms will be available due to social distancing requirements.

### **Students with Disabilities**

The University of Texas at Austin provides upon request appropriate academic accommodations for qualified students with disabilities. For more information, contact the Office of the Dean of Students at 471-6259.

**Diversity and Inclusion**

It is my intent that students from all diverse backgrounds and perspectives be well served by this course, that students' learning needs be addressed and that the diversity that students bring to this class can be comfortably expressed and be viewed as a resource, strength and benefit to all students. Please come to me at any time with any concerns.

**Personal pronoun Preference**

Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with differences of race, culture, religion, politics, sexual orientation, gender, gender variance, and nationalities. Class rosters are provided to the instructor with the student's legal name. I will gladly honor your request to address you by a name different than what appears on the roster, and by the gender pronouns you use. Please advise me of this preference early in the semester so that I may make appropriate changes to my records.

**Title IX Reportig**

Title IX is a federal law that protects against sex and gender-based discrimination, sexual harassment, sexual assault, sexual misconduct, dating/domestic violence and stalking at federally funded educational institutions. UT Austin is committed to fostering a learning and working environment free from discrimination in all its forms. When sexual misconduct occurs in our community, the university can:

Intervene to prevent harmful behavior from continuing or escalating.

Provide support and remedies to students and employees who have experienced harm or have become involved in a Title IX investigation.

Investigate and discipline violations of the university's relevant policies.

Faculty members and certain staff members are considered "Responsible Employees" or "Mandatory Reporters," which means that they are required to report violations of Title IX to the Title IX Coordinator. I am a Responsible Employee and must report any Title IX related incidents that are disclosed in writing, discussion, or one-on-one. Before talking with me, or with any faculty or staff member about a Title IX related incident, be sure to ask whether they are a responsible employee. If you want to speak with someone for support or remedies without making an official report to the university, email [advocate@austin.utexas.edu](mailto:advocate@austin.utexas.edu) For more information about reporting options and resources, visit [titleix.utexas.edu](http://titleix.utexas.edu) or contact the Title IX Office at [titleix@austin.utexas.edu](mailto:titleix@austin.utexas.edu).

**Academic Integrity**

Each student in the course is expected to abide by the University of Texas Honor Code: "As a student of The University of Texas at Austin, I shall abide by the core values of the University and uphold academic integrity." Plagiarism is taken very seriously at UT. Therefore, if you use words or ideas that are not your own (or that you have used in previous class), you must cite your sources. Otherwise you will be guilty of plagiarism and subject to academic disciplinary action, including failure of the course. You are responsible for understanding UT's Academic Honesty and the University Honor Code which can be found at the following web address: [deanofstudents.utexas.edu/conduct](http://deanofstudents.utexas.edu/conduct).