THE CITY COLLEGE OF NEW YORK
THE CITY UNIVERSITY OF NEW YORK

Colin Powell School for Civic & Global Leadership
Department of Economics & Business

Financial Modeling
ECO 31958
Office: Online
3 Credit / Spring 2023
Class Meeting: TBD

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Class Location: Online (Hybrid)

Office Hours: Office Hours: Online (everyday via slack and by appt via zoom)

Course Description

The course adopts a "learn-by-doing" approach to financial modeling so that students gain a deeper understanding of financial concepts and learn critical financial problem-solving skills. Students will apply theories from Accounting, Corporate Finance, Economics, Entrepreneurship, and Investments to several real-world financial modeling cases. Case-based modeling assignments will include Project Finance, Financial Planning and Analysis, Portfolio Construction and Portfolio Performance Analytics (process automation, reporting and decision support). That is to say, the course will take a practical approach to real-world business problems by integrating key technical skills. Large amounts of data are often used in financial modeling. The course integrates a finance curriculum with a tutorial in Visual Basic for Applications (VBA) – a key building block for financial analysts and others.

VBA is an important tool used by business professionals to build financial models and improve the efficiency of business processes. Each case will rely on advanced Excel skills and/or Visual Basic for Applications (VBA). Like Excel, VBA is a critical tool of modern financial analysts and others. With the right VBA input, Excel can be a powerful and effective financial application for forecasting, financial planning, pricing analyses, investment strategies, performance analysis or risk-management.

The goal of this course is to make students more marketable when seeking positions and more successful once they are hired because they hit the job running.

Learning Outcomes

This course is focused on building deeper understanding of finance, developing financial modeling skills, and improving analytical and problem-solving skills. The goal of the course is to make students more marketable when pursuing careers and more successful once hired.

ECO 31556 is a Field course suitable for Finance, Economics, Entrepreneurship, Business Administration and Engineering majors or minors.

The course will teach students the following:

- *Excel*. Excel skills are a significant focus of the course. Modeling cases will integrate Reference Functions, What Ifs, Excel Tables, PivotTables, and/or Regression.

- *Visual Basic for Applications (VBA)*. This course integrates a full tutorial in VBA which will be implemented in several financial modeling cases. Using VBA, students will be taught to create custom "macros", computer instructions which automate repetitive calculations and data processing functions and generate custom designed forms, graphs, and reports.

- *Data Integrity*. The most critical characteristic and skill of a Financial Analyst is data integrity. The ability to spot anomalous data and illogical results defines a superior analyst. Dozens of examples scattered throughout the course reinforcing its critical importance and consider it an essential component of decision-making will be included in this course.

- *Financial Modeling.* Students will learn to develop financial models and use these models to perform scenario testing and sensitivity analyses. This is help students in applying critical thinking to the content of a discipline and to practical problems that that will help them to confront their everyday work life. Student will also learn to draw parallels between empirically observed market outcomes and those of the predicted models to evaluate the applicability of these models to the real world.

- *Capital Markets.* Cases will use modeling skills to construct and then evaluate the performance of investment portfolios enabling students to leverage their education in Investments. This is critical at professional and personal levels.

- *Decision-making.* Students will determine which analytical tools to apply and evaluate the results via interactive problems solving sessions meant to duplicate a real-world business setting. The ability to develop informed judgments and formulate sound conclusions is a key educational outcome. The course is delivered as an interactive technical approach in which the "what do the numbers say", "if this, then what" and the "so what" is always front and center. Students will have many opportunities to synthesize findings and draw conclusions.

- *Data Intuition and Communication.* The above learning outcomes will enhance students' data intuition and communication/presentation which are critical for sound informed base business decision.

Course Pre-Requisites:
1. Financial Analysis I (21650) or Honors Financial Analysis I & II (21750) is a prerequisite for this course. With permission of the professor, students may enroll without these prerequisites.

2. Although not required, but a basic knowledge of Accounting, Finance, Microeconomics and Macroeconomics would be helpful.

3. Students should have a working knowledge of basic algebra and feel comfortable doing quantitative exercises.

4. Students should have a basic knowledge of Excel and have access to a current version of Excel. This course builds on the training in financial analytical tools and problem solving taught in Financial Analysis bootcamp ECO 21650 (Part I) and/or Honors Financial Analysis I & II ECO 21750; it requires a basic understanding of Accounting and Excel.

Required Software

You will need access to a computer with Excel. CUNY/CCNY students that do not have a **current version of Excel** on their personal computer can download the latest version for free from here. You will need access to the latest version of excel to complete the assignment and test.

Class Mode/Meetings
This class will be **online/hybrid** in format. This is to give you the best learning experience to exposed you to the best experience of the two modes of instructions. During the online sessions there will be live zoom sessions during the class time.

COURSE TOPICS

Week/Date	Finance Topic	Technical Topic
Week 1 Week 2	**Case 1. Financial Planning & Analysis** - Students will use financial ratios to build a budget for a company relying on industry comparable and historical financial statements. - Using What If Analyses, students will evaluate the sensitivity of their forecasts to changes in several key financial ratios.	**Excel.** - Using Excel, students will build a 3-year financial forecast for a company and analyze budget variances. - This assignment will utilize the Tables and What If functions.

	- They will then receive "Actuals" and analyze variances relative to their forecasts.	
Week 3 Week 4	**Case 2. Project Finance Case.** Using PivotTables, students will evaluate project base on - financial risk management - Economies of Scale - Raising capital	**Excel.** - Students will use PivotTables in this case
Week 5 Week 6	**Case 3. Introduction to Visual Basic for Financial Modeling** Introduction to Visual Basic for Applications (VBA): what is it and how is it used in financial modeling.	**VBA.** - Simple scripts to calculate several financial ratios.
Week 7 Week 8 Week 9	**Case 4. Performance Analytics: Process Automation** We will perform analyses of the performance of investment portfolios for a Venture Capital Fund	**Excel and VBA.** In preparation for the Performance Analysis, position performance and holdings data must be assembled monthly.
Week 10	**Case 5. Performance Analytics: Reporting** We will perform analyses of the venture investment portfolio and use VBA to create analytical reports.	**Excel & VBA** Based on the assembled data using VBA & Excel, prepare client Performance Reporting based on their holdings and returns.
Week 11	**Initial Presentation (Ungraded)** This is a team-based assignment.	
Week 12 Week 13	**Case 6*. Performance Analytics: Decision Support** Historical track records will be used to simulate potential portfolio constructions integration the historical volatilities and correlations of the underlying positions.	Develop a "what-if" capability to evaluate the risks of potential portfolio constructions based on historical position performance.
Week 14 Week 15	**Final Presentation (Graded)**	

This schedule is subject to change due to timing.

Evaluation & Requirements of Students

Students must complete assignments/tests from at least 6 cases using personalized Excel Workbooks. Students will also work in groups to prepare a final presentation from the final cases and other applications learn from this class. The grade distribution of these as shown below.

Graded Assignments	Percentage of Grade
Case 1. Financial Planning & Analysis	15%
Case 2. Project Finance Case	15%
Case 3. Introduction to Visual Basic for Financial Modeling	15%
Case 4. Performance Analytics: Process Automation	15%
Case 5. Performance Analytics: Reporting	15%
Case 6. Performance Analytics: Decision Support	15%
Group Project (including presentation)	10%
TOTAL	**100%**

Assignments and Exam(s)
- Each *personalized* Workbook will be graded.
- Due dates will be provided at least 2 weeks in advance and posted on the Due Dates section of Blackboard.
- No changes to the weights factoring into the class curve will be made after the fact.
- Workbook grading is fully automated and entirely objective.
- All grades are final.
- After receiving grades, students will have the opportunity to review their work and evaluate missed questions.
- Throughout the course, students should consider improving their performance by asking for questions, requesting help when needed, and working harder on subsequent assignments.

Missed Assignments and Exams
- For every day a Workbook is late, ***one (1) point will be deducted from the Required homework score***. If you do not submit a required homework assignment after 20 days after the final Workbook due date, you will be graded 50% less of the total grade for that assignment unless you missed this due to health reasons or family emergency.

Group Presentation

Teams will work together to create an in-class presentation of the results of the final three cases. More on this will be discuss after the first case.

My Expectations of You
1. Ask Questions! No good ever comes of not getting your question answered.
2. See number 1.
3. Students to participate through several online media particularly slack.

Your Expectations of Me
1.   Provide interactive, Excel-based workbooks provided free to all students.
2. Provide notes of background knowledge of financial concepts and applications behind the cases.
3. When you ask a question, I answer it fully, in class or otherwise.
4. I remain accessible for questions. I am always available via slack. E-mail and slack are always an option.
5. I will engage the class both inside and outside class in our slack channel.

Class Slack Channel

This semester is almost certain to present surprises and challenges… but also students of surprising promise and enthusiasm as its always what defines our students' body here at CCNY. With such embodiment, it's important that we all continue to carry out our unique mission of making a difference in our students' educational strive and this is also a very difficult period, all these makes it imperative you have quick answers to your questions and get your concerns cleared ASAP while you manage to strive your educational attainment and manage all the news surrounding us, in that effort, I will be glad to make myself more reachable and accessible to you, so I'm creating a Slack Channel for our class where you can get real time info and answers right on the go, **I strongly encourage all of you to join this channel**, by clicking the link below. You can always message me here 24/7.
Join me on Slack -- it's a faster, simpler way to work. Sign up here, from any device:

Link will be provided prior to the start of the semester.

Blackboard Access

Students receive important email communications from the University, College, and course instructor. Therefore, all students are expected to access and periodically check their CUNY email accounts.
All course materials are available at Blackboard. You can sign into Blackboard here. Students are expected to check the Blackboard for announcements, course materials, scheduling, and other information after each class session.

Student Support
At City College, we acknowledge that as a student, you are balancing many demands. During the semester, if you start to experience personal difficulties or stressors that are interfering with your academic performance or day to day functioning, please consider seeking free and confidential support at the Counseling Center. For more information or to make an appointment, please visit their website at https://www.ccny.cuny.edu/counseling or call (212) 650-8222. If it's outside of business hours (Monday-Friday 9-5pm) and you need immediate assistance, please call 1-888-NYC-WELL (888-692-9355). If you are concerned about one of your classmates, please share that concern.

*Students who participate in this class with their camera on or use a profile image are agreeing to have their video or image recorded solely for the purpose of creating a record for students enrolled in the class to refer to, including those enrolled students who are unable to attend live. If you are unwilling to consent to have your profile or video image recorded, be sure to keep your camera off and do not use a profile image. Likewise, students who un-mute during class and participate orally are agreeing to have their voices recorded. If you are not willing to consent to have your voice recorded during class, you will need to keep your mute button activated and communicate exclusively using the "chat" feature, which allows students to type questions and comments live.

Course Materials
Course materials are provided free to enrolled students. Materials will be distributed well in advance of the relevant class to afford students sufficient time with the materials.
Note that this course does not rely on a traditional textbook sold at the college bookstore. Instead, I rely on the actual financial disclosures of public companies and a series of proprietary Excel-based Workbooks designed to educate and train prospective finance professionals.

Where to find Assignments:

All course materials are posted to Blackboard or will be distributed via email. Please check the *Announcements* on Blackboard for the Schedule and other information before every class.

Optional Reading:
There is required textbook for this class, but some articles maybe be provided as an optional reading for students to broaden the real-world knowledge of the financial field. These readings are not required for the class and will not be graded.

CUNY/CCNY Policies

CUNY Policies on Attendance, Absence and Lateness

Please see here for CCNY policy on attendance.

Note policies adhere to "New York State Education Law, Article 5: S 224-a. regarding Students unable because of religious beliefs to Register or attend classes on certain days." and "Special Provisions for Students in the Military."

Please turn off your cellphones at the beginning of class. No texting is permitted during class time. Laptops will be used to present Excel-based assignments in each class. Students are not permitted to use their laptops for personal activities during class time.

CUNY Policy on Academic Integrity

The Economics and Business Department supports the college's policy on Academic Honesty, which states, in part:

Academic dishonesty is unacceptable and will not be tolerated. Cheating, forgery, plagiarism, and collusion in dishonest acts undermine the college's educational mission and the students' personal and intellectual growth. Students are expected to bear individual responsibility for their work and to uphold the ideal of academic integrity. Any student who attempts to compromise or devalue the academic process will be sanctioned.

Cheating is the attempted or unauthorized use of materials, information, notes, study aids, devices, or communication during an academic exercise. Examples include but are not limited to:

- Copying from another student or allowing another to copy your examination or homework assignment
- Unauthorized collaborating on a take home assignment or examination
- Taking an examination or performing a homework assignment for another student
- Removing the security protection of the course's Excel Workbooks or taking any other overt action to destroy the integrity of the Excel Workbook.

Any infringement of this rule will be treated as a serious violation of Academic Integrity. Any suspected academic dishonesty in this regard will result in a grade of F on the exams and most likely an F in the course as well. Students should also understand that a report of suspected academic dishonesty will be sent to the Dean of Students' office and becomes a permanent part of the student's file. More on CCNY academic integrity policy can be found here.

THE ACCESSABILITY CENTER/STUDENT DISABILITY SERVICES (AAC/SDS)
In compliance with CCNY policy and equal access laws, appropriate academic accommodations are offered by the AccessAbility Center. Students who are registered with the AccessAbility office and are entitled to specific accommodations must arrange to have the Office notify the Professor in writing of their status at the beginning of the semester. If specific accommodations are required for a test, students must present the instructor with a form from the Accessability Office at least one week prior to the test date to receive their accommodations.
Please find more information on **A A C / S D S** website here about their mission statement, how to register and other related policies.

Policies On Non-Discrimination and Sexual Harassment
The City University of New York prohibits discrimination on the basis of age, gender, sexual orientation, transgender, disability, genetic predisposition or carrier status, alienage or citizenship, religion, race, color, nationality or ethnic origin, or veteran, military or marital status in its student admissions, employment, access to programs, and administration of educational policies. Questions, concerns, or complaints based on any of the above may be directed to the Office of Diversity and Compliance. In addition, the specific form of gender discrimination, "sexual harassment," is prohibited by the policies of the Board of Trustees of The City University of New York. Student complaints alleging sexual harassment should be directed to the Sexual Harassment Awareness and Intake Coordinator. Brochures are available in the Office of Diversity and Compliance, the Office of Human Resources, and the Office of the Vice President for Student Affairs. Information is also available on the City University website under Office of Diversity.

NB: This syllabus serves as your contract for this class. Remaining in this class means you are responsible for knowing and following the policies stated here.