NYU TANDON SCHOOL OF ENGINEERING

Finance & Risk Engineering

Sustainable Investment (FRE-GY 6951 I)

SPRING 2026

Instructor:	Bruno G. Kamdem	**Time:**	11:00 AM - 1:41 PM
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Course Information

- **Prerequisite:** Graduate standing.
- **Credits:** 1.5.
- **Meetings:** Synchronous(in-person).
- **Type of Instruction:** Lecture.
- **Term:** January 20 – March 10 (1^{st} half).
- **Office Hours:** Before and after class or by appointment (in-person or virtually).
- **Course Description**

  In an era of AI-driven disruption, sustainable investment has shifted from the periphery to the core of global financial strategy, demanding a new breed of professional who can marry ethical stewardship with technical precision. By fusing sustainability principles with data science mastery, leveraging tools such as Python, R, Matlab, SQL, . . . , this course empowers students to navigate complex regulatory landscapes, mitigate algorithmic bias, and lead innovative ventures in an expanding market for green solutions. Through a comprehensive curriculum covering ESG scoring, impact investing, and extra-financial accounting, students gain the specialized skills necessary to secure high-value roles and drive meaningful change. Ultimately, this course bridges the gap between technological innovation and sustainable finance, providing the essential toolkit to thrive and lead within an economic landscape increasingly defined by AI augmentation and corporate accountability.
- **Course Learning Outcomes**
  1. Explain the evolution of sustainable investment from a niche strategy to a core component of global financial markets.
  2. Define key terminology related to ESG (Environmental, Social, and Governance) scoring, impact investing, and extra-financial accounting.
  3. Utilize data science tools to process and visualize sustainability-related datasets.

4. Calculate ESG scores and impact metrics using standard financial and extra-financial accounting frameworks.
5. Apply algorithmic techniques to mitigate bias in AI-driven financial models
6. Analyze the relationship between AI-driven technological innovation and sustainable financial outcomes.
7. Assess the risks associated with algorithmic bias and data integrity in AI-augmented financial decision-making.
8. Design a comprehensive sustainable investment strategy that integrates ethical stewardship with technical data precision.

General Course Requirements

- **Textbooks:**
  - **Required:** Perspectives in Sustainable Equity Investing, 1st Edition, CRC Press, Guillaume Coqueret, 2022, ISBN: 9781032071015, Web Link.
  - **Recommended:** Data Engineering with Python: Work with Massive Datasets to Design Data Models and Automate Data Pipelines Using Python, 1st Edition, Packt Publishing, Paul Crickard, 2020, ISBN: 978-1839214189, Web Link.
- **Software & Tools:**
  - Python, R, SQL, Matlab, or equivalent programming language of your choice.
  - Git / GitHub / GitLab, for version control, code collaboration, and CI/CD.
- **Course Structure:**

  This course will be structured around a variety of interactive and instructional components, which will serve as the core of the learning experience:
  - **Readings:** Weekly slides and materials will be distributed to students in advance on NYU Brightspace. Additional readings and links to relevant resources will be regularly posted on NYU Brightspace.
  - **Weekly in-Person Lectures:** These will provide foundational knowledge and facilitate in-depth discussions on key concepts. Students are expected to review weekly slides and readings prior to class. Students should come to class prepared to engage, participate, and ask questions about any concepts they do not fully understand from the lecture notes.
  - **Guest Speakers:** Occasional presentations by industry experts bridge the gap between theory and practice, providing students with a comprehensive understanding of the specialized skills required to excel in the global finance and business sectors.

- **Research & Technology Resources:**
  - Collection of business research resources: NYU Business Library:
    - ☐ Link to How to Contact:
  - Databases, journal articles, miscellaneous: Bern Dibner Library:
    - ☐ 5 MetroTech Center, dibner.library@nyu.edu, (646) 997-3530
  - 24/7 technology assistance:
    - ☐ Tandon IT Help Desk: soehelpdesk@nyu.edu, (646) 997-3123.
    - ☐ NYU IT Service Desk: AskIT@nyu.edu, (212) 998-3333.

Course Expectations

- **Class Participation, Peer Feedback, Technology**

  Active engagement is a fundamental pillar of this course and constitutes a significant portion of your final grade. To achieve an overall grade of "B" or higher in this course, students must demonstrate consistent and meaningful involvement; it is impossible to reach this academic threshold by merely attending passively. As this component relies on real-time engagement and peer feedback, any absence will lead to an automatic grade of zero for the day's session. Attendance is mandatory for all scheduled class meetings. In the event of an unavoidable absence due to family or health obligations, you must notify me in advance. To ensure accurate record-keeping, a formal roster will be called at the beginning of each session. Beyond formal peer grading responsibilities, you are expected to be a visible presence in the classroom by contributing insightful comments, asking probing questions, and offering diverse viewpoints during lectures, guest presentations, and weekly group presentations. Furthermore, proficiency in using GitHub for technical collaboration and NYU Brightspace for resource engagement is mandatory. Please be advised that a consistent failure to meet these interaction standards will result in a failing mark for this specific grade component, regardless of your performance on exams or technical assignments.

- **Weekly Group Presentations**

  Weekly Group Presentations foster active learning by requiring students to apply lecture concepts to real-world scenarios and current market developments. These presentations are designed to sharpen the "soft skills" and technical articulation necessary for successful professional interviews. Each session must align with the course schedule, encouraging independent research and a thorough exploration of the week's theme. Students are encouraged to utilize library resources to enhance the depth of their presentations. Students will be pre-assigned to groups of three or four. While these groups are required for formal assignments, students are encouraged to form study groups to prepare for all class sessions. Each group will lead a 20 to 30-minute discussion at the start of class, synthesizing material from the previous week. These presentations are graded in real-time; please consult the Verbal Presentation Rubric on NYU Brightspace to ensure all criteria for full

credit are met. Please ensure all Weekly Group Presentations utilize credible, high-quality sources. You can access reputable journals and references via NYU Libraries. I strongly encourage you to reach out to the librarians listed above for research guidance.

- **Term Group Project**

  The Term Group Project serves as the definitive capstone of this course, seamlessly integrating core learning objectives with high-level practical applications. Students will analyze the intricate relationship between sustainable investment principles and financial performance, harnessing the aforementioned software tools for deep evaluations of ESG factors and leveraging artificial intelligence to identify and mitigate algorithmic biases. By working with real-world datasets, this project simulates the complexities of the financial sector and requires students to navigate stringent regulatory landscapes with technical precision. The project deliverables include a comprehensive written report and a graded in-class presentation. To ensure industry relevance, the evaluation process may integrate feedback from sector experts. Achieving a top score requires strict adherence to the formal grading rubrics, which, along with detailed guidelines, will be posted on NYU Brightspace. Students are expected to self-organize into groups of three or four during the first week of the semester. Groups comprising students from diverse backgrounds are strongly encouraged. All project topics and group compositions must receive instructor approval prior to the initial proposal deadline. Given its significant weight in the final grade (see Table below), this project is a critical assessment of your analytical mastery and readiness for a leadership career in finance, business, or entrepreneurship. Please utilize scholarly, reputable sources for your Term Group Project. These are readily available via NYU Libraries. I strongly recommend reaching out to the subject librarians at the contact links above for specialized support.

Form groups, choose topic	starts on	Week 1
Initial Term Group Project Proposal	10%	Week 2
Revised Term Group Project Proposal	10%	Week 4
Final Term Group Project Report	50%	Week 6
Term Group Project Presentation	30%	Week 7

- **Formative & Summative Assessments**
  - **Weekly Homework** Weekly Homework Assignments are designed to reinforce key concepts and ensure a progressive mastery of the course material. Each task builds directly upon the week's lessons, providing the hands-on experience essential for excelling in professional technical business and finance roles, competitive job markets, or entrepreneurial ventures. To receive full credit, all assignments must be submitted

electronically via NYU Brightspace by 11:59 PM on the specified due date, unless otherwise noted. Please, see the Course Schedule below.

- **Midterm Exam** The Midterm will be administered in class on the date specified in the Course Schedule. This is an individual, closed-book assessment that must be completed and submitted during the scheduled class session. Students are permitted to use one double-sided, A4-sized reference sheet (cheat sheet) and/or authorized software as specified by me. The exam is comprehensive, covering all course material discussed up to the week prior. Please consult the Course Schedule below for the exact date and time.
- **Final Exam** The Final Exam will be administered via NYU Brightspace during a 72-hour window. While the window is broad, the exam is strictly timed: once started, you will have exactly 3 hours to complete and submit your work. This is an open-book assessment; however, all submissions must represent your own original, independent work. The final deadline for submission is 11:59 PM on the last day of the term.
- **Exam Policies and Absences** All students are required to complete the Midterm and Final Exams at their scheduled dates and times. No make-up exams will be administered without prior authorization through the appropriate academic channels; failure to take an exam without such approval will result in a grade of zero. Medical emergencies are the only valid grounds for an excused absence, and documentation must explicitly state that the student was medically incapacitated on the day of the exam. A general confirmation of a clinic visit is insufficient. Non-academic commitments, including job interviews, employer events, travel, or personal celebrations, do not qualify as valid excuses. Students are responsible for reviewing the exam schedule, managing personal commitments accordingly, and ensuring their presence for all assessments without exception.

Performance Evaluation

- **Course Grading Distribution & Scale**

Grading Distribution

Group Presentation	10%
Participation, Peer Feedback, Technology	10%
Homework Assignments	10%
Midterm Exam	20%
Final Exam	20%
Term Group Project	30%
TOTAL	**100%**

Grading Scale

Percentage	**Grade**
95 – 100	A
90 – 94.99	A-
87.5 – 89.99	B+
82.5 – 87.49	B
80 – 82.49	B-
77.5 – 79.99	C+
72.5 – 77.49	C
70 – 72.49	C-
67.5 – 69.99	D+
62.5 – 67.49	D
60 – 62.49	D-
< 60	F

Course Policies

- **Generative Artificial Intelligence Use**
  AI tools, such as ChatGPT or Grammarly, may be used for brainstorming or refining ideas, but all work submitted must be your own. If AI assistance is used in drafting, please include a note explaining how the tool was used.
- **Late Work**
  Late work is generally accepted in this course, provided that the submission is made within seven days of the original deadline and prior to the final week of the term. To qualify for grading, any assignment submitted after the due date must be accompanied by a brief written explanation for the delay. Please be aware that a progressive late penalty of 10% per day will be applied to the earned score, up to a maximum reduction of 50%. However, these penalties may be waived at the instructor's discretion for documented emergencies or pre-approved professional commitments, provided communication occurs before the deadline.
- **Moses Center Statement of Disability**
  If you are a student with a disability who is requesting accommodations, please contact New York University's Moses Center for Student Accessibility (CSA) at 212-998-4980

or mosescsa@nyu.edu. You must be registered with CSA to receive accommodations. Information about the Moses Center can be found at www.nyu.edu/csa. The Moses Center is located at 726 Broadway on the 2nd floor.

- **NYU School of Engineering Policies and Procedures on Academic Misconduct (from the School of Engineering Student Code of Conduct)**

  (A) **Introduction:** The School of Engineering encourages academic excellence in an environment that promotes honesty, integrity, and fairness, and students at the School of Engineering are expected to exhibit those qualities in their academic work. It is through the process of submitting their own work and receiving honest feedback on that work that students may progress academically. Any act of academic dishonesty is seen as an attack upon the School and will not be tolerated. Furthermore, those who breach the School's rules on academic integrity will be sanctioned under this Policy. Students are responsible for familiarizing themselves with the School's Policy on Academic Misconduct available here.

  (B) **Definition:** Academic dishonesty may include misrepresentation, deception, dishonesty, or any act of falsification committed by a student to influence a grade or other academic evaluation. Academic dishonesty also includes intentionally damaging the academic work of others or assisting other students in acts of dishonesty. Common examples of academically dishonest behavior include, but are not limited to the following:

  1. **Cheating:** intentionally using or attempting to use unauthorized notes, books, electronic media, or electronic communications in an exam; talking with fellow students or looking at another person's work during an exam; submitting work prepared in advance for an in-class examination; having someone take an exam for you or taking an exam for someone else; violating other rules governing the administration of examinations.
  2. **Fabrication:** including but not limited to, falsifying experimental data and/or citations.
  3. **Plagiarism:** intentionally or knowingly representing the words or ideas of another as one's own in any academic exercise; failure to attribute direct quotations, paraphrases, or borrowed facts or information.
  4. **Unauthorized collaboration:** working together on work that was meant to be your own.
  5. **Duplicating work:** : presenting for grading the same work for more than one project or in more than one class, unless express and prior permission has been received from the course instructor(s) or research adviser involved.
  6. **Forgery:** altering any academic document, including, but not limited to academic records, admissions materials, or medical excuses.

- **Statement On Inclusion**

  The NYU Tandon School values an inclusive and equitable environment for all our students. I hope to foster a sense of community in this class and consider it a place where individuals of all backgrounds, beliefs, ethnicities, national origins, gender identities, sexual orientations, religious and political affiliations, and abilities will be treated with respect. It is my intent that all students' learning needs be addressed both in and out of class and that the diversity that students bring to this class be viewed as a resource, strength, and benefit. If this standard is not being upheld, please feel free to speak with me.

Course Schedule

TOPICS	READINGS	ASSIGNMENTS
Week 1 (Tue, Jan 20 – Sun, Jan 25)		
Guest Speaker Introduction To Sustainable Finance •Definitions •Responsible and Ethical Investing •ESG Ecosystem & Regulatory Framework •The Market of ESG Investing	Data Engineering with Python:Chapter 3, pp. 46-51	Homework 1 DUE o Review Class Syllabus o Welcome email (confirm reception) o Weekly Group Presentations (form groups) o Term Group Project (form groups)
Week 2 (Mon, Jan 26 – Sun, Feb 1)		
ESG Scoring • Data and Variables • Scoring System • Rating System	Perspectives in Sustainable Equity Investing: 1th Edition: Section 2.1	Homework 2 DUE Initial Term Group Project Proposal DUE o Weekly Group Presentation
Week 3 (Mon, Feb 2 – Sun, Feb 8)		
Impact of ESG Investing on Asset Prices And Portfolio Returns • Theoretical Models • Empirical Results • Cost of Capital	Perspectives in Sustainable Equity Investing: 1th Edition: Sections 5.1-5.2	Homework 3 DUE o Weekly Group Presentation
Week 4 (Mon, Feb 9 – Sun, Feb 15)		
Sustainable Financial Products • ESG Mutual Funds • Green and Social Bonds • Sustainable Alternative Assets	Perspectives in Sustainable Equity Investing: 1th Edition: Sections 4.2, 4.3, 4.6, 47	Revised Term Group Project Proposal DUE o Midterm Exam
Week 5 (Mon, Feb 16 – Sun, Feb 22)		
Impact Investing • Definition • Sustainable Development Goals • The Market of Impact Investing • An Example With the Biodiversity Risk	Perspectives in Sustainable Equity Investing: 1th Edition: Sections 3.1 - 3.3	Homework 4 DUE o Weekly Group Presentation
Week 6 (Mon, Feb 23 – Sun, Mar 1)		
Engagement & Voting Policy •Active Ownership •ESG Voting	Perspectives in Sustainable Equity Investing: 1th Edition: Section 1.3	Homework 5 DUE Final Written Term Group Project Report DUE o Weekly Group Presentation
Week 7 (Mon, Mar 2 – Tue, Mar 10)		
• Guest Speaker • Extra-Financial Accounting	Perspectives in Sustainable Equity Investing: 1th Edition: Sections 6.1 6.2	o Term Group Project Presentation o Final Exam