

**Business, Economy and Policy in the midst of COVID-19: V2.0**  
INTA-GB 2324/ MULT-UB 24 Spring 2021 Thu 6:00 to 9:00 PM  
Professors Viral V Acharya and Richard Berner

### **Course overview**

The global pandemic continues adversely to affect individuals, businesses, consumers, markets, and governments. It created the most adverse but brief recession and unemployment levels of our times. It triggered in response expansive fiscal and monetary policies. And it appears to be fostering ongoing and potentially permanent changes in business models, in the pace and composition of economic activity, in the spread of economic inequality, in the way we think about economic and health policy, and in governance.

In this course, we will explore the origins and spread of the pandemic, as well as the lessons that can be learned from the history of pandemics as well as of financial crises caused by other types of aggregate shocks. In that regard, we will study the vulnerabilities in health infrastructures, economies, business models and financial systems to understand how they can be made more resilient. We will examine the policy responses to the pandemic and what we have learned from them.

Understanding these complex problems will allow us to have an informed discussion around several critical issues for near future:

- What are the origins of pandemics, how likely are they to be more frequent, how can public health infrastructure help increase societies' resilience to them, and what are the benefits and costs of boosting resilience? Do other existential threats, such as climate-related risks, increase the likely frequency and intensity of pandemics?
- Now that vaccines are available, will they be useful in avoiding and controlling pandemics, as have been those for polio and measles? What are the logistics of vaccinating 340 million people?
- What have we learned about:
  - The tradeoffs between limiting the spread of the pandemic and economic activity?
  - Whether targeted intervention in the form of testing-tracing-quarantining is superior to lockdowns in dealing with pandemics? What are the costs and benefits?
  - Are there alternatives to backstopping small businesses and protecting employment?
  - How can the modern society cope with working from home?
  - How can resolve the conflicts among personal data, ethics and privacy to enable better responses to future pandemics?
- How should central banks and governments exit from their support for the economy and financial system? What are the long-term consequences of central banks' and

governments' backstops for business credit risks? How can we understand the apparent dichotomy between the economy and financial markets?

- What have we learned about economic vulnerabilities; specifically in our economic safety nets? What have we learned about financial system vulnerabilities and building resilience?
- How will business models change? Will some businesses become stranded assets or zombies? Will/should supply chains be more diversified?

We may not always have the final answers, but it seems imperative in business education to make a start at tackling these questions in the classroom.

### **Learning outcomes**

The goal of this course is to equip students with an understanding of the causes and consequences of infectious disease pandemics and what society must do to mitigate them to limit their adverse health and economic/financial impacts. The course is designed to draw on a variety of disciplines. Reflecting that approach, the course is designed to be accessible for undergraduates, full-time, part-time and executive MBAs, and to students in law, public policy and other schools at NYU.

### **Schedule.**

INTA-GB 2324/ MULT-UB 24 meets on Thursdays beginning February 11, 2020 from 6:00 PM to 9:00 PM online. Classes will not meet on designated holidays. *There is no spring break.* May 6 is the date of the last class.

### **Materials.**

There is no textbook required for the course. Readings are largely online or supplied through NYU Classes.

You should have completed a basic course (or demonstrate some proficiency) in each of macroeconomics, finance and statistics. *In addition, prior to the course*, if you are unfamiliar with or want a review of financial Instruments, financial Markets, and financial Institutions, you should read or at least browse chapters 1-3 of Cecchetti and Schoenholtz, Money, Banking and Financial Markets.

Before the course starts, a glance through the presentation below which was prepared in March 2020 by Stern faculty as a primer on the outbreak of the pandemic would be extremely valuable to set the context for the course:

[Download PDF](#)

Required readings appear below. Required readings should be completed before class.

Recommended/optional readings are found below those required. These provide additional background for interested students.

Students are expected to keep abreast of major pandemic, financial and policy developments, using resources like various websites from *The Economist*, the *FT*, and the *WSJ*. Access to these publications is available to students at heavily discounted rates.

### **Course Requirements: Exams, Assignments and Grades.**

Attendance in class online is required. Both attendance and class participation will influence the course grade in the case of (good or bad) outliers and will serve as tiebreakers.

We will have a midterm exam and a final project. There will be no make-ups for either, which are required of all students. Any absence from a test without prior written approval from the professor constitutes a failure (a grade of zero) of the quiz or exam. If the professor excuses a student from the midterm exam, the weight on the final exam will be increased accordingly. The only valid reason for seeking to be excused is a serious (documented) illness or the equivalent.

Course grade weights for each component are:

Midterm exam: 35%

Final Project: 65%

Attendance & class participation: Influences tie-breaks and outliers (good and bad)

### **Please note the following key dates in your calendars:**

**Midterm Exam: March 25 in class**

**Final Project due: May 10**

### **NYU Classes**

Aside from the selections in the links below, everything you need for this course will be posted to NYU Classes: readings, assignments, slides, and links to information sources.

### **Teaching Fellow**

Raaga Akkineni is our TF. She will help grade and help you with any questions. Raaga is a second-year masters in economics and econometrics student in the Faculty of Arts and Sciences. She can be reached by email at [ssa542@nyu.edu](mailto:ssa542@nyu.edu).

### **Communication**

The key to any successful relationship is good communication. We plan to use the announcements section of NYU Classes extensively. In return, we expect you to share your comments and observations with us and/or Raaga. You may email us ([vacharya@stern.nyu.edu](mailto:vacharya@stern.nyu.edu) or [rberner@stern.nyu.edu](mailto:rberner@stern.nyu.edu)), or catch us before or after class. Your ideas and feedback can make a big contribution to the course.

Online office hours are on Thursdays before class, but appointments are preferred (and can be arranged by email).

### **Help**

If you need help, please contact us or Raaga. We usually reply to email quickly (if you don't hear from us within 24 hours, please try again).

### **Professional behavior**

In the interest of providing everyone with the best classroom – virtual or actual -- experience, we ask that you:

- Join at least five minutes before class
- Display your name in every class/Please use video in Zoom
- Put smartphones away before class (their use in class is not permitted)
- Be engaged

### **Academic Integrity**

Our undergraduate [Academics Pillar](#) states that *we take pride in our well-rounded education and approach our academics with honesty and integrity*. Indeed, integrity is critical to all that we do here at NYU Stern. As members of our community, all students agree to abide by the NYU Stern Student Code of Conduct, which includes a commitment to:

- Exercise integrity in all aspects of one's academic work including, but not limited to, the preparation and completion of exams, papers and all other course requirements by not engaging in any method or means that provides an unfair advantage.
- Clearly acknowledge the work and efforts of others when submitting written work as one's own. Ideas, data, direct quotations (which should be designated with quotation marks), paraphrasing, creative expression, or any other incorporation of the work of others should be fully referenced.
- Refrain from behaving in ways that knowingly support, assist, or in any way attempt to enable another person to engage in any violation of the Code of Conduct. Our support also includes reporting any observed violations of this Code of Conduct or other School and University policies that are deemed to adversely affect the NYU Stern community.

The entire Stern Student Code of Conduct applies to all students enrolled in Stern courses and can be found here: [www.stern.nyu.edu/uc/codeofconduct](http://www.stern.nyu.edu/uc/codeofconduct)

To help ensure the integrity of our learning community, prose assignments you submit to NYU Classes will be submitted to Turnitin. Turnitin will compare your submission to a database of prior submissions to Turnitin, current and archived Web pages, periodicals, journals, and publications. Additionally, your document will become part of the Turnitin database.

### **General Conduct & Behavior**

Students are also expected to maintain and abide by the highest standards of professional conduct and behavior. Please familiarize yourself with Stern's Policy in Regard to In-Class Behavior & Expectations (<http://www.stern.nyu.edu/portal-partners/current-students/undergraduate/resources-policies/academic-policies/index.htm>) and the NYU Student

Conduct Policy (<https://www.nyu.edu/about/policies-guidelines-compliance/policies-and-guidelines/university-student-conduct-policy.html>).

**Note: Evidence of cheating on quizzes, exams or graded assignments will result in a course grade of F without appeal.**

## **Grading Guidelines**

### Grading Information for Stern Core Courses

At NYU Stern, we strive to create courses that challenge students intellectually and that meet the Stern standards of academic excellence. To ensure fairness and clarity of grading, the Stern faculty have adopted a grading guideline for core courses with enrollments of more than 25 students in which approximately 35% of students will receive an “A” or “A-“ grade. In core classes of less than 25 students, the instructor is at liberty to give whatever grades they think the students deserve, while maintaining rigorous academic standards.

### Grading Information for Stern Elective Courses

At NYU Stern, we strive to create courses that challenge students intellectually and that meet the Stern standards of academic excellence. To ensure fairness and clarity of grading, the Stern faculty have agreed that for elective courses the individual instructor or department is responsible for determining reasonable grading guidelines.

## **STUDENT ACCESSIBILITY**

If you will require academic accommodation of any kind during this course, you must notify me at the beginning of the course and provide a letter from the Moses Center for Student Accessibility (212-998-4980, [mosescsa@nyu.edu](mailto:mosescsa@nyu.edu)) verifying your registration and outlining the accommodations they recommend. If you will need to take an exam at the Moses Center for Student Accessibility, you must submit a completed Exam Accommodations Form to them at least one week prior to the scheduled exam time to be guaranteed accommodation. For more information, visit the CSA website: <https://www.nyu.edu/students/communities-and-groups/student-accessibility.html>

## Tentative Class Schedule

### 1. Origins, Resilience Feb 11

- What are the origins of pandemics?
- How likely are they to be more frequent?
- How can public health infrastructure help increase societies' resilience to them, and what are the benefits and costs of boosting resilience?
- Do other existential threats, such as climate-related risks, increase the likely frequency and intensity of pandemics?

Visitor: R. Scott Braithwaite, MD, MS, FACP Chief, Division of Comparative Effectiveness and Decision Science; Professor of Population Health and Medicine; Department of Population Health; New York University School of Medicine, 6-6:45 PM

Required reading:

Braithwaite, et al. [Under what circumstances could vaccination offset the harm from a more transmissible variant of SARS-COV-2 in NYC? Trade-offs regarding prioritization and speed of vaccination](#), MedRxiv, February 1, 2021

Tedros Adhanom Ghebreyesus and Michael Bloomberg, [Stopping the Next Pandemic Starts Now](#), Bloomberg, February 3, 2021

Zhang, Jennifer, "[Coronavirus Response Shows the World Is Not Ready for Climate-Induced Pandemics](#)", Earth Institute, Columbia University

Recommended reading:

Glied, Sharon. "Public health and economics: externalities, rivalries, excludability, and politics." In *The Contested Boundaries of American Public Health*, pp. 15-31. Rutgers University Press, 2008. Sections II, III, and V only. (PDF provided in NYU Classes/Lessons)

Obama Administration, [Pandemic Playbook](#), Executive Summary, pp 4-11.

Goolsbee, Austan, and Chad Syverson. *Fear, lockdown, and diversion: Comparing drivers of pandemic economic decline 2020*. WP No. w27432. National Bureau of Economic Research, 2020. <https://www.nber.org/papers/w27432.pdf>

Dave, Dhaval M., Andrew I. Friedson, Kyutaro Matsuzawa, Joseph J. Sabia, and Samuel Safford. *Black Lives Matter protests, social distancing and covid-19*. WP No. w27408 National Bureau of Economic Research, 2020. <https://www.nber.org/papers/w27408.pdf>

Healton, Cheryl and Christopher Dickey, [What Would It Really Take to Halt Ebola and Prevent Future Epidemics?](#) Huffington Post, 2014

### 2. Vaccines and other remedies February 18

- Now that vaccines are available, will they be useful in avoiding and controlling pandemics, as have been those for polio and measles?

- What are the logistics of vaccinating 340 million people?

*Visitors:*

*Lavina Talukdar, SVP and Head of Investor Relations, Moderna, 6-6:45 PM)*

Recommended Readings:

Mascola J.R., Fauci A.S., “[Novel Vaccine Technologies for the 21<sup>st</sup> Century](#)”

Graham B.S., Corbett K.S., “[Prototype pathogen approach for pandemic preparedness: world on fire](#)”, The Journal Of Clinical Investigation, 2020

“[Moderna Manufacturing: Why Norwood?](#)” White Paper

*Dr. Celine Gounder, NYU Grossman School of Medicine and former member of the Biden COVID Taskforce 7-7:45 PM*

Required reading:

Congressional Research Service, [COVID-19 Vaccines: Global Health Issues](#), Dec 8, 2020

**Listen** to the [EPIDEMIC](#) podcast:

- COVID disrupting industry: Ep 50, Ep 51, Ep 56
- Public health, preparedness, and resilience: Ep 9, Ep 15, Ep 24, Ep 31, Ep 44
- COVID vaccines: Ep 25, Ep 53
- Quarantine: Ep 54
- Contact tracing: Ep 38
- Public health vs the economy: Ep 22
- Race disparities: Ep 8, Ep 13

Read the following Op-eds:

Gounder C., “[When we need public health most, our leaders are waging war against it](#)”

Gounder C., “[Zika is a warning to the US public health system to stop rushing from fire to fire](#)”

Gounder C., “[Doctors, nurses and scientists -- not politicians -- should be leading coronavirus briefings](#)”

Gounder C., Michaelis B., Cialdini R., “[How to avoid being the Grinch who stole Thanksgiving](#)”

Recommended Reading:

Centers for Disease Control and Prevention (CDC), [Frequently Asked Questions about COVID-19 Vaccination](#), Dec 29, 2020

Biden Harris: [COVID 19 Gameplan](#)

Kent A. Sepkowitz, [The 1947 Smallpox Vaccination Campaign in New York City, Revisited](#)

Virology Blog, [Smallpox in New York City, 1947](#)

### **3. What have we learned about – see above Feb 25 - March 4**

- Detecting, Testing and Tracing; Suppression / Containment Strategies

- Epidemiological basis/modeling, including Digital applications
- Demographic and geographic distribution and implications
- Tracking: technology vs herd immunity
- Privacy-Surveillance Tradeoffs
- Lockdown, Phasing out, Adaptive strategies
- Medical support and Strategies
- Cost-benefit analysis of alternative strategies (apart from economic impact)

*Visitors: Thomas Philippon, (6:00-6:45pm)*

*Stephan Luck, Federal Reserve Bank of New York (7-7:45PM)*

Required Reading:

Blanchard, Philippon, and Pisani-Ferry, [A new policy toolkit is needed as countries exit COVID-19 lockdowns](#)

Correia, Sergio and Luck, Stephan and Verner, Emil, Pandemics Depress the Economy, Public Health Interventions Do Not: Evidence from the 1918 Flu (June 5, 2020). Available at SSRN: <https://ssrn.com/abstract=3561560> or <http://dx.doi.org/10.2139/ssrn.3561560>

Recommended Reading:

Jones C.J., Philippon T., Venkateswaran V., “[Optimal Mitigation Policies in a Pandemic: Social Distancing and Working from Home](#)”

Cato, [The Economics of Lockdowns](#), Video

Scherbina, Anna, [Determining the Optimal Duration of the COVID-19 Suppression Policy: A Cost-Benefit Analysis](#)

#### **March 4**

*Visitor: Wendy Edelberg, Director of the Hamilton Project, Brookings (March 4, 6:00-6:45pm)*

Required Reading:

Edelberg W., Sheiner L., “[What could additional fiscal policy do for the economy in the next three years](#)”

Recommended reading:

Seliski J., Betz A., Chen Y.G., Demirel U.D., Lee J., Nelson J., “[Key Methods That CBO Used to Estimate the Effects of Pandemic-Related Legislation on Output](#)”

Edelberg W., Sheiner L., “[The Macroeconomic Implications of Biden’s \\$1.9 Trillion Fiscal Package](#)”, The Hamilton Project, Jan 28 2021.

Deloitte, [Privacy and Data Protection in the age of COVID-19](#)

Ghose, et al, Trading Privacy for the Greater Social Good: How Did America React During COVID-19?, [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3624069](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3624069)

Ghose and Sokol, Unlocking Platform Technology to Combat Health Pandemics, <https://www.yalejreg.com/nc/unlocking-platform-technology-to-combat-health-pandemics-by-anindya-ghose-and-d-daniel-sokol/>

WHO, [Joint Statement on Data Protection and Privacy in the COVID-19 Response](#)

Holmes, [Reexamining data privacy and protection amid COVID-19](#)

#### **4. Paradox of the Pandemic I - Macroeconomic Impact of Containment March 11**

- Supply and Demand Shocks
- Economic Vulnerabilities and Resilience
- Recession: Depth and duration; Depression; Deflation
- Jobs, Firm creation, Small businesses, Large businesses, Bankruptcies
- Tradeoffs

*Visitor: Torsten Slok, Apollo (March 11, 6-6:45pm)*

Required Reading:

Opportunity Insights: <https://opportunityinsights.org/>

[US Small-Business Recovery After the COVID-19 Crisis, McKinsey & Company, July 2020](#)

**Targeting Paycheck Protection Program to those Most in Need** (Viral V Acharya with Manasa Gopal) [Download PDF](#) -Related [op-ed](#) published at [marketwatch.com](http://marketwatch.com)

Recommended Reading:

David Autor and Elisabeth Reynolds, [The Nature of Work after the COVID Crisis: Too Few Low-Wage Jobs](#), July 2020

Chetty R, Friedman J.N., Hendren N, Stepner M, and the Opportunity Insights Team. “The Economic Impacts of COVID-19: Evidence from a New Public Database Built from Private Sector Data” September 2020.

Available online: [https://opportunityinsights.org/wp-content/uploads/2020/05/tracker\\_paper.pdf](https://opportunityinsights.org/wp-content/uploads/2020/05/tracker_paper.pdf)

Julian Kozlowski, Laura Veldkamp, Venky Venkateswaran, [Scarring Body and Mind: The Long-Term Belief-Scarring Effects of COVID-19](#), September 2020 presented at Jackson Hole, 2020; slides [here](#)

Alekseev G, Amer S, Gopal M, Kuchler T, Schneider JW, Stroebel J, Wernerfelt N, “The Effects of COVID-19 on U.S. Small Businesses: Evidence from Owners, Managers, and Employees” September 10, 2020. Available at SSRN:

[https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3692733](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3692733)

#### **5. Paradox of the Pandemic II - Financial Impact of Containment March 18**

- Amplifiers; e.g., procyclicality, liquidity spirals
- Equity, Bond, Wholesale funding, Foreign exchange: Returns, volatility and correlation

- Banks, Broker-dealers, Insurance companies

Visitor: Sascha Steffen (March 18, 6-6:45 pm)

Required Reading:

SEC, [U.S. Credit Markets Interconnectedness and the Effects of the COVID-19 Economic Shock](#), Executive Summary, p. 1-13

[Covid-19 and the credit cycle](#), Edward Altman, Journal of Credit Risk, 16(2), 1–28

"[Stress Test](#)" for Banks as Liquidity Providers in a time of COVID (Viral V Acharya and Sascha Steffen), published on voxu.org [Download PDF](#)

Recommended Reading:

Federal Reserve, [Financial Stability Report](#), November 2020, Overview, p 7-14

[A fifty-year retrospective on credit risk models, the Altman Z-score family of models and their applications to financial markets and managerial strategies](#), Edward Altman, Journal of Credit Risk 14(4), 1–34

The risk of being a fallen angel and the corporate dash for cash in the midst of COVID (Viral V Acharya and Sascha Steffen), forthcoming in *Review of Corporate Financial Studies* (Long version) [Download PDF](#) (July 2020) (Short version) [Download PDF](#), in [COVID Economics: A Real Time Journal](#) (Video) [Short NBER presentation](#)

Marti Subrahmanyam, [How to rebuild after the crisis](#), Bloomberg; [Coronavirus is making clear there is no solidarity in the EU](#), Fortune.; [To fight the coronavirus budget crisis, act like Alexander Hamilton](#), Fortune.

Agnès Bénassy-Quéré, Beatrice Weder di Mauro (eds.), [Europe in the Time of Covid-19, Chapter 5 and 6](#), VOX CEPR Policy Portal, May 2020.

[The COVID-19 Shock and Equity Shortfall: Firm-level Evidence from Italy](#), Review of Corporate Finance Studies.

[In Sickness and in Debt: The Covid-19 Impact on Sovereign Credit Risk](#), SSRN Working Paper

## March 25 Midterm and Review

### 6. Policy Responses April 1 and April 8

- How should central banks and governments exit from their support for the economy and financial system?
- What are the long-term consequences of central banks' and governments' backstops for business credit risks?
- How can we understand the apparent dichotomy between the economy and financial markets?

Visitor: Anna Kovner (April 1, 6-6:45 pm)

Required Reading

Fleming M., Sarkar A., Tassel P.V., [“The COVID-19 Pandemic and the Fed’s Response”](#)

[“Fed’s big stick lets it speak powerfully”](#) Moneyandbanking.com

Recommended Reading:

Haughwout A.F., Hyman B.G., Lieber M. [“Helping State and Local Governments Stay Liquid”](#), Liberty Street Economics.

Kovner A., Martin A., [“The Official Sector’s Response to the Coronavirus Pandemic and Moral Hazard”](#), Liberty Street Economics.

Kovner A., Martin A., [“Market Failures and Official Sector Interventions”](#), Liberty Street Economics.

Kovner A, Martin A. [“Expanding the Toolkit: Facilities Established to Respond to the COVID-19 Pandemic”](#) Liberty Street Economics, September 22, 2020.

*Visitor: Eileen Fahey, CRO Fitch (April 8, 6-6:45pm)*

Required Reading:

Fitch Ratings, [“Sovereign Rating Criteria: Master Criteria”](#) pp 1-10

Recommended Reading:

Fitch ratings, ‘Global Perspectives: The Growing Inequality in Global Government Debt Burdens’

Khan S., du Toit A., [“Emerging-Market Sovereigns: Pandemic Aftermath Sets Stage for Cyclical Uplift”](#)

Meskim M., [“Rating Agency treatment of EM Risk at odds with people who take it”](#)

## 7. Vulnerabilities April 15

- What have we learned about economic vulnerabilities; specifically in our economic safety nets? In both advanced and emerging economies?
- What have we learned about financial system vulnerabilities and building resilience?

*Visitor: Victoria Ivashina (April 15, 6-6:45 pm)*

Required Reading:

G30 Working Group on Corporate Sector Revitalization, [“Reviving and Restructuring the Corporate Sector Post-Covid: Designing Public Policy Interventions”](#), 2020.

Recommended Reading:

IMF, [Policy Responses to COVID-19](#)

IMF, [COVID-19 Financial Assistance and Debt Service Relief](#)

IMF, [How the IMF Can Help Countries Address the Economic Impact of Coronavirus](#)

World Bank, [August 21, 2020: An update on our work at the World Bank Group](#)

World Bank, [Foreign direct investment and global value chains in the wake of COVID-19](#)

### **8. Business Models April 22**

- How will business models change?
- Will some businesses become stranded assets or zombies?
- Will/should supply chains be more diversified?

*Visitor: Arun Sundarajan (April 22, 6-6:45pm)*

Required Reading:

TBD

Recommended Reading:

TBD

### **9. Planning for Future – Improving Public Health Resilience April 29 and May 6**

- Especially in Emerging Market Economies, including infrastructure and financing
- Investing in Resilience and Robustness against Low-Risk, High-Cost shocks
- Implications for Business models, Economy and Policy; Future of Work

*Visitor: Scott Gottlieb, Health Infrastructure (April 29, 6pm-6:45pm) Invited*

*Alternate: Elodie Ghedin, NIH/NIAID*

Required Reading:

TBD

Recommended Reading:

TBD

*Visitor: Richard Coraine, Union Square Hospitality Group, (Danny Meyer) on Restaurants (May 6th, 6pm-6:45pm)*

Required Reading:

Ford Foundation [“Reimagining a Sustainable Restaurant Industry in New York”](#)

Recommended Reading:

Setting the Table (hard copies and Kindle-version available via Amazon)

Does Working From Home Work? Evidence from A Chinese Experiment, Nicholas Bloom, James Liang, John Roberts and Zhichun Jenny Ying, The Quarterly Journal of Economics (2015), 165–218

Collaborating During Coronavirus: The Impact of Covid-19 On the Nature of Work, Evan DeFilippis, Stephen Michael Impink, Madison Singell, Jeffrey T. Polzer and Raffaella Sadun, NBER Working Paper

**10. Final Project in lieu of final Due 6pm May 12**

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