# STRATEGY

Whether you're working at a law or financial firm, advertising or insurance agency, hospital, pharmaceutical company, or other type of organization, strategy and statistics are key to an organization's overall performance. Strategy creates a vision and emphasizes resources needed for firms to develop a competitive advantage. Statistics provides the data and tools executives need to make decisions. Together, these disciplines work continuously to support the firm's long-term sustainability and growth.

At the Gabelli School, students can specialize in either field, preparing for careers as consultants, analysts, general managers, statisticians, strategy staff, and advisors.

For students interested specifically in managing goals and making recommendations in health care, there are dedicated options at all levels: undergraduate students can complete a secondary concentration in the business of health care; graduate students can choose a secondary concentration in health care. Additionally, the area prepares students in the interdisciplinary M.S. in Health Administration.

## Programs

- M.B.A. Secondary Concentration in Healthcare Management
- M.B.A. Concentration in Management (Interdisciplinary)
- M.B.A. Secondary Concentration in Entrepreneurship (Interdisciplinary)
- M.B.A. Secondary Concentration in Blockchain (Interdisciplinary)

## Courses

### Strategy (SAGB) Courses

**SAGB 7618. Organization Theory. (3 Credits)**
While discussion of business is often couched in economic terms, more often than not business is influenced by sociological and psychological factors. In this class, you will study the key dimensions of what is known as "Macro OT" (sociological perspectives) and "Micro OT" (psychological perspectives). Macro OT coverage will include Institutional Theory (legitimacy, certifications, and isomorphism), Network Theory (structure, position, tie type, and network dynamics), and Social Movement Theory and Media Construction (performances). Micro OT coverage will include Search Theory and Organizational Learning Theory (exploration vs. exploitation), Decision-making Biases (confirmation bias, anchoring, etc.) and Agency Theory (monitoring and incentive alignment). Other Meso Theoretical Constructs covered include Identity, Myths and Artifacts, Roles, and Deviance/Conformity.

**SAGB 7622. Consulting Skills. (3 Credits)**
Students develop the skills involved in each phase of the consultation process: contracting with clients, gathering critical performance data, diagnosing the information for improvement opportunities, providing feedback to the client, and building strategies for intervention. This course prepares students for different types of client-consultant relationships, internally and externally.

**SAGB 7626. BIMBA: Global Policy. (4.5 Credits)**

**SAGB 7641. British Economy and Brexit. (3 Credits)**
This intensive course is designed to give students an in-depth understanding of Brexit, including the implications for the British economy and the companies that operate in it. Students meet three times as a class in preparation for travel to England. This course may count toward a Finance or Management concentration. Please see your program director or dean-adviser for further registration information.

**SAGB 7660. Strategy. (3 Credits)**
FT MBA CORE/ PMBA FLEX CORE COURSE. Focuses on defining an organization's mission, establishing its objectives, developing strategies for achieving those objectives, and assuring implementation and continual updating of long-term plans. This course integrates the knowledge and skills developed in the core courses. (Previous title: Business Policy)

**SAGB 7661. Strategy. (3 Credits)**
This course introduces the strategic management framework, integrating the perspectives of different functional areas in understanding a firm's performance. Learning goals involve the development of diagnostic reasoning skills, the practice of strategy communication skills, and the application of a toolkit to analyze issues relevant to the development of an appropriate strategy for a firm. Lectures, case studies, and project work are part of the pedagogy of this course.

**SAGB 7671. Industry Analysis and Strategic Planning. (3 Credits)**
Discusses techniques for analyzing the long-term attractiveness of different industries and develops a framework to understand the nature of competition and the relative competitive position of firms within industries. Emphasizes global factors that affect industry attractiveness and competitive positioning. In particular, highlights the impact of differences in and the competitive advantages of nations and trade, as well as the development of global standards for the long-term profit potential of industries. While this course emphasizes the industry level, it also includes competitive factors of firms within industries to introduce a framework for strategic planning at the firm level.
**Attribute:** ABIB.

**SAGB 8999. Independent Study. (3 Credits)**
Independent Study.

**SAGB 769K. History of Business. (3 Credits)**
This course will focus on the interrelationships between the business community and the development of the United States of America. The course is divided into three sections that will cover such topics as the colonization of America by the Europeans, industrialization in the United States and the civil war, and creating an environment of business regulation.

**SAGB 769Y. Value Innovation. (3 Credits)**
This course will introduce students to blue ocean strategy and value innovation: the strategic logic of high growth. Students will learn how to develop value innovation strategies that reshape industries and lead to the creation of new market space. The course will include lectures, class team work, and case studies.

**SAGB 76AD. Quantitative Methods and Decision Analysis. (3 Credits)**
A study of quantitative methods and decision making analysis.

**SAGB 76AX. Strategic Management and the Pharmaceutical Industry. (3 Credits)**
This course will introduce students to the skills and techniques in researching highly regulated industries, using the pharmaceutical industry as an example. The industry is going through major transformations, with the basic business model being threatened. This course will analyze the reasons for this and will help in defining newly emergent business models in the Pharmaceutical industry. The uncertainties created by turbulence in the political, economic, social, and techno-scientific systems will be highlighted as will the creative solutions being attempted.
**Attribute:** ABHM.

**SAGB 76AY. Introduction to Healthcare Systems. (3 Credits)**
This course will describe the different elements of the healthcare system and highlight the role of the payers, providers, patients, healthcare service workers, and the industry (pharmaceutical, devices, supplies, and diagnostics) within the context of a larger social system governed by local regulations and different demographic realities. While the emphasis will be on the United States, key differences with other systems such as in Europe, Canada, Brazil, and China will also be presented. The role of key associations in the U.S. such as the AMA, IOM, PhRMA, patient advocacy groups, and unions will be described. Emerging trends in the system in the United States will be presented as will the impact of other countries on the U.S.

**SAGB 76BC. Judgment and Decision Making. (3 Credits)**
Decision-making is a central human activity, but how good are we at it? Scientific evidence suggests that our decisions are often biased and flawed, resulting in disappointing or even disastrous outcomes. This course draws upon contemporary research in economics and psychology to answer two questions: (1) how should we rationally approach decision-making, and (2) why is it that our actual decision-making is so often irrational?.

**SAGB 76BH. Hist of International Business. (3 Credits)**
History of International Business explores the transition from an agrarian to a modern business economy of four nations: China, Russia/Soviet Union, Germany and Japan. Each of these nations came to understand that economic modernization was vital for true independence in the world of the nineteenth and twentieth centuries. How they faced their unique challenges shaped the futures of their nations, often bringing down governments and forcing radical reformation of their societies. History of International Business will explore these efforts and relate them to the continuing challenges of the twenty-first century economy.

**SAGB 76BK. The Rose Program. (3 Credits)**
This course is intended for students who want to learn more about regulation in the financial services industry and want to get actively involved in shaping the regulatory space. Top performing project teams will present their proposals to a panel of Wall Street executives and will be invited to Washington, D.C. (all expenses paid) to present to regulators.

**SAGB 76BL. History of Labor in America. (3 Credits)**
This course will examine the development of the labor movement in America, starting with its colonial roots in the eighteenth century, through the rapid growth of the movement in the nineteenth century as America industrialized, to the increasing politicization of the movement as it reached the height of its influence in the twentieth century, and ending with an analysis of the modern decline of organized labor. Discussions will include the changing legal climate within which the unions operated, the often hostile business climate against which the unions organized, and the struggles against internal corruption within the unions.

**SAGB 76BM. Innovation in Business and Energy. (3 Credits)**
This course aims to frame and critique opportunities for business to create innovations in energy systems. It discusses how contemporary energy systems have evolved and how energy infrastructures vary across regions of the world. It also examines how business decision makers can think about choices of energy and energy systems by encouraging students to think broadly in terms of innovation possibilities.
**Attribute:** ABGS.

**SAGB 76BO. Urban Lab. (4.5 Credits)**
This interdisciplinary course explores groundbreaking issues in urban research with the goal of inspiring new ways to think about the city's future and Fordham's role in helping to shape that future. The course includes a lab component focused on applied research and scholarship, deep engagement with the urban community, and the development of innovative solutions. Students will work with civic and community organizations, public agencies, and urban experts to identify, evaluate, and implement effective policies and programs in specific topic areas.

**SAGB 76BP. Current Topics in Healthcare. (3 Credits)**
Healthcare management operates in a very dynamic environment. As healthcare policies change with new administrations so do the priorities of providers and payers. The patients feel the impact of these changes the most, while the industry has to continuously re-assess the validity of its business models. Further, new technologies, scientific breakthroughs, and system innovations keep healthcare administrators on their toes. This course provides an opportunity to discuss the most prevalent issues in healthcare as they are happening. Guest lecturers and professors provide their views on different challenges that the healthcare industry faces including policy, operations, risk taking and decision-making uncertainties, and the developing solutions. Students will participate in these discussions and do a final paper on one of the topics of their choosing. Each formal lecture will be followed by one or two in-depth discussion sessions.

**SAGB 76BS. Blockchain: Industry Disruptor and Creator. (3 Credits)**
Blockchain (the technology underlying Bitcoin and Ethereum) is a transformative technology that will up-end existing industries and spawn completely new ones. In this course, students will study the fundamentals of blockchain and examine its potential impact on industries as diverse as banking, energy, music, and non-profits.
**Attributes:** ABBC, ABEP, ABFO.

**SAGB 76BT. Business Strategy Simulation. (3 Credits)**
The design of this course is built upon a decision-making laboratory (DML) that creates a context-rich simulated business environment in which student teams manage simulated businesses. The course adopts a strategic orientation and promotes the synthesizing of knowledge conveyed through the curriculum with deliberate attention to marketing, accounting, finance, and management of organizations. The course also presents a means for practicing approaches to dealing with rapid and systemic change in a business environment. Students work in teams that have control over how they should organize—by function, by market, by product, etc. Each student team is assigned as the management team of a specific business enterprise in a realistic, safe, virtual industry/market environment. The bookends of the course are brief exercises called "From Reality to Lab" and "From Lab to Reality.".

**SAGB 76BU. AI for Strategic Decision Making. (3 Credits)**
To achieve competitive advantage, managers need to make certain decisions about activities along their value chains. This course tries to help students (i.e., future or current managers) understand how they can use machine learning (ML) techniques for such decisions. While ML is a vast and rapidly evolving domain, the underlying logic and concepts are well identified. Therefore, to make the best use of our time, we not only cover the current techniques and applications of ML but also its fundamental concepts rooted in statistics. This approach will give students the necessary tools to self-teach as they enter the job market and ML evolves. While students are not expected to be expert statisticians, a basic understanding of statistics will be helpful. Nevertheless, willingness to learn and explore beyond class would make a significant difference in students' learning journey. The course covers both the theory and application of ML using conventional lectures, lab sessions, case studies, web-service platforms (involving Amazon Web Services, Azure, etc.), and guest lectures by pioneering adopters of ML from the industry.

**SAGB 76BV. Sustainability & Strategy. (3 Credits)**
Sustainability has increasingly been regarded as standard business practice for corporations. Yet, many firms still struggle to integrate sustainability. In this course, we will take a strategic approach to understanding and creating solutions to corporate sustainability issues, such as climate change, that managers face at present. By applying strategy tools and frameworks, this course will illustrate how firms may cope with sustainability pressure and transition towards a more sustainable way of conducting their business, while providing further insights into how sustainability challenges may be considered opportunities rather than obstacles. We will also consider sustainability-oriented value creation and business models where firms more explicitly seek sustainability as their primary goals rather than as a secondary objective. This course should be of value to students keen on developing critical thinking skills and analytical skills surrounding corporate sustainability.
**Attribute:** ABGS.

**SAGB 76BW. Navigating AI Disruption: Strategies for Innovation and Change. (3 Credits)**
In today's rapidly evolving technological landscape, artificial intelligence (AI) and generative AI are reshaping industries and redefining competitive advantage. This intensive course is designed to equip forward-thinking leaders with the knowledge and skills to understand and navigate these powerful forces of disruption. Students explore distinct strategies for managing technological change, engage with new case studies, and apply their learning to real-world scenarios in the gaming industry—a sector on the cusp of disruption by AI.

**SAGB 76BX. Biotechnology: Strategy & Management. (3 Credits)**
This course exposes students to the "business of biotech" from scientific discovery startup through its product launch and subsequent organizational and scientific pipeline growth. Topics include scientific discovery, biotech-related funding and organizational structures, an introduction to regulatory and clinical trial considerations, biotech alliances, patient access, ethics and compliance, and commercialization and growth to meet consumer needs in this highly regulated industry. Students will experience what it means to be a professional in this industry with all its complexities.

**SAGB 869J. Managing Innov&Change I. (1.5 Credits)**
Today's firms are faced with a number of unique challenges that demand an increasing pace, volume and complexity of organizational changes. Firms have to learn to manage incremental innovations and change, and rapidly respond to disruptive innovations and discontinuous change. This course is geared towards understanding the organization behavior component of the challenges, techniques and burdens associated with initiating and implementing major change in an organization.

**SAGB 869K. Managing Innov&Change II. (1.5 Credits)**
Today's firms are faced with a number of unique challenges that demand an increasing pace, volume and complexity of organizational changes. Firms have to learn to manage incremental innovations and change, and rapidly respond to disruptive innovations and discontinuous change. This course is geared towards understanding the strategy component of the challenges, techniques and burdens associated with initiating and implementing major change in an organization.

**SAGB 869L. Consulting Skills. (1.5 Credits)**
This 1.5-credit course is designed to equip students in an MBA program with practical consulting tools and techniques, including problem-solving, teamwork, and client communication skills. It helps students better understand the consulting process and successful delivery of consulting projects.

# Design Management (DGGB Courses)

**DGGB 6800. Pre-MBA Quant Camp. (0 Credits)**
QuantCamp helps prepare incoming students for the rigor of their core courses. It covers the basics of finance, accounting, and statistics.

**DGGB 6810. Math Methods for Bus. (3 Credits)**
(MBA program prerequisite) Studies the fundamental methods of mathematics applied in business statistics and operations research. The course concentrates on linear algebra and differential and integral calculus.

**DGGB 6820. Statistics. (3 Credits)**
MBA CORE COURSE Introduces the basic statistical concepts essential for business research and decision-making. These include descriptive statistics, probability distributions, statistical inference and simple and multiple regression.
**Attribute:** ISEL.
**Mutually Exclusive:** MMGB 6820.

**DGGB 6830. Statistics and Decisions. (3 Credits)**
Introduces the statistical concepts essential for business decision making. Topics include: Random Variables, normal distribution, sampling distributions; confidence intervals; one and two sample hypothesis tests; simple linear regression; multiple regression; categorical data analysis; ethics in statistics. These concepts will be implemented using state of the art statistical software.

**DGGB 7811. System Design Internship. (1 to 3 Credits)**

**DGGB 7844. Stat Methods and Comp I. (3 Credits)**
This course is designed to introduce statisticians to statistical programming and data analysis. Topics will include: hypothesis testing, regression models, experimental design and simulation. The statistical topics are integrated into the programming content.
**Attribute:** ISEL.

**DGGB 7850. Forecasting Models. (3 Credits)**
Introduces and discusses forecasting systems capable of interconnecting separate areas of business. Efficient forecasting systems, based on modern analytical and simulation techniques, can provide necessary insights into the behavior of strategic variables over time.
**Attribute:** ASDM.
**Prerequisites:** DGGB 6820 or GBA Waiver Statistics with a score of 070.

**DGGB 8999. Independent Study. (3 Credits)**

# Applied Statistics & Decision-Making (SDGB) Courses

**SDGB 7811. Applied Statistics Internship. (1 to 3 Credits)**
This is an experiential elective within the Applied Statistics program, requiring faculty guidance for academic credit from professional training.

**SDGB 7840. Applied Regression Analysis. (3 Credits)**
Focuses on preliminary data analysis, model formulation and estimation, and reliability and sensitivity analysis to understand causal links between various elements of a relationship as the foundation for effective system design and control. Multivariate regression models and techniques of experimental design provide the basis for exploring these links. Discusses applications to all areas of business.
**Prerequisite:** SDGB 7844.

**SDGB 7841. Statistical Theory I. (3 Credits)**
This course provides an Introduction to mathematical Statistics and a foundation for acquiring the skills to apply advanced statistical models to many important areas of decision-making in business. The course focuses on developing an understanding of random variables, their distribution functions, and sampling theory.

**SDGB 7842. Statistical Theory II. (3 Credits)**
This course provides an Introduction to mathematical Statistics and a foundation for acquiring the skills to apply advanced statistical models to many important areas of decision-making in business. The course focuses on developing an understanding of: Hypothesis testing, Nonparametric Statistics, Bayesian Statistics, Multivariate Methods and Linear Models and their applications.
**Prerequisites:** DGGB 781A or SDGB 7841.

**SDGB 7843. Judgment and Decision Making. (3 Credits)**
Decision-making is a central human activity, but how good are we at it? Scientific evidence suggests that our decisions are often biased and flawed, resulting in disappointing or even disastrous outcomes. This course draws upon contemporary research in economics and psychology to answer two questions: (1) how should we rationally approach decision-making, and (2) why is it that our actual decision-making is so often irrational?.

**SDGB 7844. Stat Methods and Comp I. (3 Credits)**
This course is designed to introduce statisticians to statistical programming and data analysis. Topics will include: hypothesis testing, regression models, experimental design and simulation. The statistical topics are integrated into the programming content.

**SDGB 7845. Sampling Theory. (3 Credits)**
This course provides a foundation in sample design and data collection for decision making. We study theoretical principles and applications, starting with definition of the population characteristic of concern, the frame, sampling methods, sample size, and sampling plan. We study also sampling and non-sampling errors and biases, problems of non-response, the half-open interval, and other methods to assure validity and usefulness of our data.

**SDGB 7846. Advanced Financial Econometric. (3 Credits)**
This course takes up Bayesian estimation of small-scale financial sector and macro-econometric models. Counter-factual simulations will also be used, as well as Monte-carlo methods for evaluating confidence intervals. In addition to Bayesian estimatlon, the course will make use of extensive data sets to investigate topics such as contagion effects across countries in financial markets, and neural networks for predictive accuracy. *Subject to NY Approval*

**SDGB 7847. Machine Learning for Stats. (3 Credits)**
The course will give students an opportunity to implement statistical techniques in "R" to better understand how they work. Emphasis will be on implementation and intuition rather than on background theory and analytical methods. The course will offer a lab-style approach to numerical analysis and optimization methods used to fit statistical models. Topics will include gradient descent/ascent for regression and classification, newton's method, expectation maximization for mixture models, numerical maximum a-posteriori estimation via EM. Students will have the chance to implement techniques and become proficient in "R" by writing functions and classes that perform standard analyses.

**SDGB 7848. Observational Studies. (3 Credits)**
In real-world settings, analysts must draw inferences about causes and effects from observational data, such as those generated from a nonrandomized study. For example, how do we truly determine whether charter schools produce better student outcomes, or whether a marketing campaign for a product has increased consumer awareness? This course will cover select classes of statistical methods to help analysts design and analyze observational studies, for real-world decision-making. Topics will include propensity scores, predictive, modeling, and stimulation-based inference; the R statistical software will serve as the primary computational tool for this course, so a basic knowledge is required.

**SDGB 7849. Experimental Design. (3 Credits)**
This course examines the design, implementation, and analysis of empirical research methods. Topics include experimental and quasi-experimental designs; validity within designs; sampling; and data analysis.

**SDGB 7850. Statistical Risk Analysis. (3 Credits)**
This course examines various aspects of risk as revealed or concealed in business, society, and personal situations by utilizing tools in probability theory, statistical analysis, decision theory, and cognitive and behavioral sciences. Students will learn basic risk metrics and models, along with methods for risk analysis and management. Through case studies mirroring Western and Chinese societies and ranging from health & safety, social inequality, finance, to sports and entertainment, students will gain deeper understanding of risk and become better decision makers. Interdisciplinary in nature, this course invites students to think unconventionally of problems that are at the frontier of the globalized and information-saturated world.

**SDGB 7851. Measurement and Data Visualization. (3 Credits)**
Businesses use metrics not only to track, evaluate, and incentivize their employees and customers but also to monitor and improve their organizations. To inform their decisions, they may, for example, look at company records, run an experiment, speak to employees and customers, or make site visits. All of these activities generate data, requiring decisions to be made on how to collect, summarize, analyze, and present these disparate pieces of information. In this course, we consider how to approach these issues, from developing appropriate metrics and heuristics, to thinking about data quality, to creating accessible visualizations.
**Attribute:** ISEL.

**SDGB 8999. Applied Stats & Decision. (3 Credits)**