COURSES: WEATHERHEAD SCHOOL OF MANAGEMENT

Accounting (ACCT)

ACCT 100. Foundations of Accounting I. 3 Units.

Accounting is the language of business and this course exposes students to that language. This course introduces students to the basic principles, objectives, terminology and role of financial, managerial, and tax accounting in business. This course is intended for both business and non-business majors. This is the first required accounting course for all business majors. Counts as a Quantitative Reasoning course.

ACCT 106. Spreadsheet Basics for Business and Non-Business Majors. 1 Unit.

This one hour class combines classroom and project work to complete assignments leveraging Microsoft Excel 365. Through this course, students will gain an understanding of data, data extraction, creation of data models and use of spreadsheet technology for solving business information related problems. Prereq: No previous credit for ACCT 207.

ACCT 200. Foundations of Accounting II. 3 Units.

This course teaches future business professionals how to produce and use financial information for business decisions. This course expands upon the basic principles and objectives of financial and managerial accounting providing business students with essential skills for any business career. This course is the second required accounting course for all WSOM business majors. Prereq: ACCT 100.

ACCT 300. Corporate Reporting I. 3 Units.

The Corporate Reporting sequence provides an understanding of the basic financial statements and disclosures, revenue and expense recognition, profitability analysis, and the effect of business transactions on a company's financial statements and footnotes. This is the first course in the Corporate Reporting sequence, with a particular emphasis on key concepts, as well as certain accounts (cash, receivables and inventory). Offered as ACCT 300 and ACCT 400. Prereq: ACCT 200.

ACCT 301. Corporate Reporting II. 3 Units.

The Corporate Reporting sequence provides an understanding of the basic financial statements and disclosures, revenue and expense recognition, profitability analysis, and the effect of business transactions on a company's financial statements and footnotes. This is the second course in the Corporate Reporting sequence, with a particular emphasis on certain accounts (property plant and equipment, investments, and various liabilities, including long-term debt, leases, pensions and other postretirement benefits). International (IFRS) aspects also are considered. Offered as ACCT 301 and ACCT 401. Prereq: ACCT 300.

ACCT 305. Income Tax: Concepts, Skills, Planning. 3 Units.

This course addresses U.S. Federal Income Taxation concepts and applications. The subject matter includes topics applicable to individuals, partnerships and corporations and various other entities required to file income tax returns. In addition the subject matter addressed includes a variety of business, legal and taxation concepts and practices related to effective tax planning. The purpose of the course is to provide the student with the appropriate knowledge and skill levels to "speak the language of U.S. tax." Prereq: Sophomore Standing.

ACCT 306. Accounting Information Systems. 3 Units.

This course introduces the students to the major business cycles as they relate to Accounting Information Systems, including the revenue, procurement and conversion cycles. Additionally, students will be introduced to risks and controls in accounting systems, as well as emerging accounting technology. Credit not given for both ACCT 306 (or equivalent) and ACCT 406. Offered as ACCT 306 and ACCT 406. Prereq: ACCT 200.

ACCT 307. Applied Management Accounting. 3 Units.

This course advances students' ability to use management accounting to evaluate decisions, businesses, and managers. Students will begin with the idea that management accounting is a dialect within the language of accounting, explore varied types of costs and their relationships to pricing, and then use these concepts to assess decisions, organizations, and performance. Case studies will be used to stress application of management accounting concepts to problems faced in the real-world business environment. Students will use advanced spreadsheet functions and data analytics/visualization tools to further develop their proficiency at using management accounting to evaluate decisions, businesses, and managers. Credit not given for both ACCT 307 (or equivalent) and ACCT 407. Offered as ACCT 307 and ACCT 407. Prereq: ACCT 200. Coreq: ACCT 307L.

ACCT 307L. Technology Lab for Management Accounting. 1 Unit.

In this lab, students will learn about the technology tools currently used in the professional environment to further develop their proficiency at using management accounting in evaluating decisions, businesses, and managers. Examples of foundational technology tools include advanced spreadsheet functions and data analytics/visualization tools. The knowledge gained in this lab will be applied in ACCT 307, Applied Management Accounting, taken concurrently with the lab. Prereq: ACCT 106 and no previous credit for ACCT 207. Coreq: ACCT 307.

ACCT 314. Attestation and Assurance Services. 3 Units.

This course covers the role of the auditor, the audit process, the public accounting profession, audit risk and materiality, fraud, audit methods and techniques, audit planning, internal control, the effects of information technology on the audit, auditing revenue, receivables and inventories, professional ethics, legal responsibilities, emerging assurance services, and recent developments in the auditing profession. Prereq: ACCT 300.

ACCT 316. Technology Tools for Financial Management. 1 Unit.

In this class, students will learn about the technology tools currently used in the professional environment to advance their ability to manage, report and analyze financial data. Examples of foundational tools include advanced spreadsheet functions and data collection/download tools. Prereq: ACCT 106 and no previous credit for ACCT 301L.

ACCT 360. Independent Study. 1 - 18 Units.

ACCT 400. Corporate Reporting I. 3 Units.

The Corporate Reporting sequence provides an understanding of the basic financial statements and disclosures, revenue and expense recognition, profitability analysis, and the effect of business transactions on a company's financial statements and footnotes. This is the first course in the Corporate Reporting sequence, with a particular emphasis on key concepts, as well as certain accounts (cash, receivables and inventory). Offered as ACCT 300 and ACCT 400. Prereq: ACCT 200.

ACCT 401. Corporate Reporting II. 3 Units.

The Corporate Reporting sequence provides an understanding of the basic financial statements and disclosures, revenue and expense recognition, profitability analysis, and the effect of business transactions on a company's financial statements and footnotes. This is the second course in the Corporate Reporting sequence, with a particular emphasis on certain accounts (property plant and equipment, investments, and various liabilities, including long-term debt, leases, pensions and other postretirement benefits). International (IFRS) aspects also are considered. Offered as ACCT 301 and ACCT 401. Prereq: ACCT 300 or ACCT 400.

ACCT 401H. Accounting for Healthcare. 3 Units.

This course exposes MSM-Healthcare students to ways that accounting information helps managers monitor and improve the performance of organizations. After studying the nature and limitations of accounting information, we explore how financial, cost, tax, and regulatory accounting are used by various stakeholders. From this effort, students become comfortable evaluating accounting recognition, valuation, classification, and disclosure issues that arise in an executive's career. Finally, we study how accounting is a feedback loop that enables managers to assess consequences of past decisions and think about what should be done going forward. Feedback loops, in turn, can give rise to observer effects and/or unpredictable outcomes. Course content contributes to achieving the program goal of strengthening a student's ability to promote positive change in healthcare. Prereq: Master of Healthcare Management students only.

ACCT 404. Advanced Financial Reporting. 3 Units.

This course covers advanced financial reporting topics including financial statement consolidations, foreign currency translations and transactions, VIE's, (variable interest entities), derivatives, segment reporting, and interim financial statement reporting. As a graduate course, a master's level project or paper will be required. Prereq: ACCT 301.

ACCT 405. Advanced Federal Taxes. 3 Units.

Corporate income taxes, estate and gift tax, fiduciary income taxes, partnerships, and hybrid forms of organization are covered. Prereq: ACCT 305.

ACCT 406. Accounting Information Systems. 3 Units.

This course introduces the students to the major business cycles as they relate to Accounting Information Systems, including the revenue, procurement and conversion cycles. Additionally, students will be introduced to risks and controls in accounting systems, as well as emerging accounting technology. Credit not given for both ACCT 306 (or equivalent) and ACCT 406. Offered as ACCT 306 and ACCT 406. Prereq: ACCT 200.

ACCT 407. Applied Management Accounting. 3 Units.

This course advances students' ability to use management accounting to evaluate decisions, businesses, and managers. Students will begin with the idea that management accounting is a dialect within the language of accounting, explore varied types of costs and their relationships to pricing, and then use these concepts to assess decisions, organizations, and performance. Case studies will be used to stress application of management accounting concepts to problems faced in the real-world business environment. Students will use advanced spreadsheet functions and data analytics/visualization tools to further develop their proficiency at using management accounting to evaluate decisions, businesses, and managers. Credit not given for both ACCT 307 (or equivalent) and ACCT 407. Offered as ACCT 307 and ACCT 407. Prereq: SCMG 433 or ACCT 307L.

ACCT 414. Corporate Reporting and Analysis. 3 Units.

This course provides a basis for identification, analysis, and interpretation of data from accounting, finance, and other business sources for decision making by investors, creditors, and company management. Students are introduced to concepts and analytical techniques/models that can be used to assess and interpret the financial health of a business and its intrinsic value. At a practical and theoretical level, the course integrates knowledge from the areas of accounting, economics, organizational behavior, and finance, which has proven useful in the quantitative analysis of organizational performance and value. Students are expected to be proficient with Canvas, Excel, and Word. Prereq: (ACCT 300 or ACCT 401H or MBAC 502 or MBAP 402 or MBAP 402H) and (BAFI 355 or MBAC 504 or MBAP 405 or MBAP 405H) and (OPRE 207 or MBAC 511 or MBAP 403 or MBAP 403H).

ACCT 431. Client Communication, Ethics, and Professionalism. 3 Units.

This course is designed to help prepare students for the role of being a professional advisor in dynamic and often uncertain technical scenarios while meeting ethical and professional responsibilities to all relevant stakeholders. Class sessions and assignments have an overarching emphasis on professionalism, ethics and client communications. This course utilizes the U.S. Federal tax law as the primary underlying body of knowledge driving discussions and learning. Prereq: ACCT 305.

ACCT 444. Advanced Auditing Theory and Practice. 3 Units.

This course examines auditing concepts and issues in depth. A special focus exists on audit evidence and how auditors make decisions. Some topic areas include professional ethics, auditor legal liability, audit firm regulation, risk assessment, internal control over financial reporting, auditing estimates, and fraud. Prereq: ACCT 314.

ACCT 501. Special Problems and Topics. 0 - 18 Units.

This course is offered, with permission, to students undertaking reading in a field of special interest.

ACCT 520. Advanced Accounting Theory. 3 Units.

This seminar studies contemporary issues in financial accounting theory and business reporting. Topics are considered from their historical development to contemporary circumstances. Academic and professional literatures are employed to gain a variety of perspectives on current matters. The development of communication skills, written and verbal, and use of support technology for presentations is emphasized throughout. Students are required to make several individual and team presentations, to conduct database and periodical research and to provide frequent written and oral research reports. Prereq: ACCT 301.

ACCT 601. Special Problems and Topics. 1 - 18 Units.

This course is offered, with permission, to Ph.D. candidates undertaking reading in a field of special interest.

ACCT 701. Dissertation Ph.D.. 1 - 9 Units.

(Credit as arranged.) Prereq: Predoctoral research consent or advanced to Ph.D. candidacy milestone.

Banking & Finance (BAFI)

BAFI 206. Personal Financial Management with Digital Technology. 1 Unit.

In the digital era, financial technologies have worked its way into our digital wallets and portfolio. Mobile banking services, budgeting and investing apps are inextricably linked with how we conduct our personal finances. While financial literacy deals with underlying finance concepts such as time value of money, compounding, budgeting and investing, financial technologies dictate how we access tools to carry out day-to-day budgeting, investing and consuming. In the digital era, financial technologies, Fintech, serves as an enabler of financial literacy, FinLit. While technology is not a substitute for literacy, Fintech complements literacy. Technology has created a level playing field and has advanced the access to credit and investments. This course will cover four areas: 1. Comparing banking services and costs 2. Digital banking: Using mobile apps and financial technologies for financial management and decision making 3. Personal finance and digital money 4. Risks in the digital era: Identity protection Offered as BAFI 206 and MGMT 206.

BAFI 210. Seminar: Financial Services Industry. 0 - 1.5 Units.

The goal of this course is to prepare students for an alumni-sponsored trip to NYC focused on careers in financial services. Learning goals include: (i) providing career identification, research and preparation skills, with a particular emphasis on financial services, (ii) exposing students to job opportunities in financial services, (iii) allowing students to acquire fundamental business and financial skills, (iv) enabling students to apply skills to actual businesses and real-world cases and projects, (v) building a personal portfolio of experiences to share with prospective employers for each student and (vi) enhancing students' abilities to communicate in a business setting by developing proficiency in PowerPoint and oral presentation skills.

BAFI 335. The Role of Technology in Shaping Finance: Past, Present and Future. 3 Units.

Technology-enabled business models have led the evolution and innovation in finance throughout history. From the birth of the computer to the current fintech era and into the future they will continue to facilitate disintermediation and innovation. These innovations revolutionize how existing firms create and deliver products and services, addresses privacy, regulatory and law-enforcement challenges, provides new gateways for entrepreneurship, and seed opportunities for inclusive growth. These models also increasingly apply technological approaches to the main financial intermediation functions: payments, capital raising, remittances, managing uncertainty and risk, market price discovery, and mediating information asymmetry and incentives. In today's Financial businesses, consumers bank via mobile apps integrated into social media, institutions trade electronically, and robo-advisers make decisions about investment portfolios. This course provides an overview of the history of the impact these models have had and common catalysts to change as well as a deep dive into the current applications to gain understanding of where finance may head in the future. The course will also cover innovations, and what business models for new and traditional financial services firms are likely to succeed. Prereq: Sophomore Standing.

BAFI 341. Money and Banking. 3 Units.

This course emphasizes the importance of financial markets, the nature and role of the financial system, and the linkages between these--money and banking--and the economy. Emphasis is placed on both theoretical and practical constructs, on major innovations and contemporary changes, and the closely intertwined condition of financial and economic systems with monetary and fiscal policy. Offered as BAFI 341 and ECON 341. Prereq: ECON 102 and ECON 103 and Sophomore standing or above.

BAFI 350. Payments Technology. 3 Units.

Payments Technology offers a comprehensive exploration of the various facets of payment systems used in today's financial world. This course aims to provide students with an understanding of both the technical and strategic aspects of payment systems, ranging from traditional swipe transactions to innovative payment solutions. By the end of this course, students will be well-versed in how payment systems operate, the challenges they face, and the ongoing innovations that are shaping the future of payments.

BAFI 351. Financial Data Science: Data Analytics & Machine Learning Fundamentals. 3 Units.

This course equips students with the requisite SQL and Python programming and analytical skills needed to undertake advanced statistical learning procedures on financial datasets. The course begins with an introduction to structured query language (SQL) to ensure students can interact with relational databases commonly used to warehouse financial data. Students will learn how to retrieve, manipulate, and manage financial data from databases such as Wharton Research Data Services (WRDS), SEC Filings, Bloomberg, and Yahoo! Finance. Following the SQL modules, the course transitions into Python-based data preparation, covering extraction, transformation, and loading (ETL) processes, exploratory data analysis, and the generation of summary statistics. Students will develop hands-on experience in handling financial data from various sources and file formats, addressing the unique challenges associated with financial datasets. The course then introduces machine learning techniques relevant to financial modeling, specifically focusing on supervised learning techniques. Students will gain practical experience in model construction and evaluation. A special emphasis is placed on the interpretation of predictive modeling results, assessing model accuracy, and understanding the bias-variance tradeoff inherent in ML modeling. Students should expect to spend 5 to 7 hours per week outside of class meetings completing readings, coding assignments, and data analysis projects. By the end of the course, students will have acquired the SQL, Python programming, and statistical skills necessary to apply machine learning methods to complex financial datasets. Prereq: BAFI 355.

BAFI 355. Corporate Finance. 3 Units.

The basic goals of this course are to familiarize students with the concepts and tools used in financial management at both the corporate and personal levels. They include the notion of present value, securities valuation, risk and return analysis, and other financial analysis techniques. The concepts and techniques are, in turn, used to evaluate and make decisions regarding the firm's investments (capital budgeting) and the cost of capital. Prereq: ACCT 100 or ACCT 101.

BAFI 356. Investments. 3 Units.

This course is about investing in securities. It provides a comprehensive introduction to security analysis and portfolio management. Investing is a rational decision-making process in which the investor seeks to select a package or portfolio of securities that meets a predetermined set of objectives. Descriptive, institutional and quantitative decision-making methods are arranged in a cohesive framework of analysis of interest to the informed investor. Topics include modern portfolio theory, the relation between risk and return, efficient markets, bonds, and options, among others. Prereq: BAFI 355.

BAFI 357. ValuAtion : Financial Modeling Using A.I.. 3 Units.

This course teaches you to value companies and their equity by projecting their future performance and estimating a target stock price using advanced tools, including AI-driven analysis. You will learn to utilize discounted cash flow (DCF) and comparable company analysis and integrate traditional Excel methods with AI technologies like ChatGPT and Microsoft Copilot. Students will learn both manual and Al-driven approaches to financial analysis to ensure a robust understanding of valuation techniques, including discounted cash flow analysis. This course teaches you how to value a company by determining its current financial standing, projecting its future performance and estimating a target stock price in an Excel environment and ChatGPT api. You will learn fundamental tools to help determine if an investment is a rational one, if a stock price is undervalued, overvalued, or appropriately valued. Investment banks, private equity firms, and analysts use these fundamental Excel-based tools and AI based prompt engineering. Prereq: BAFI 355.

BAFI 358. Intermediate Corporate Finance. 3 Units.

This is a rigorous second course in corporate finance (following BAFI 355) designed to lay the analytic foundation for careers in business. The objective is to strengthen students' theoretical and conceptual understanding of several important topics in finance, and to develop their problem-solving skills. Topics covered include economic cash flows and valuation, Long term financial planning and ratios analysis, Growth and external financing, Short term financial planning and Working capital management, Managerial options and valuation, Derivatives, Agency cost and asymmetric information, Capital structure and payout policy. Prereq: BAFI 355

BAFI 359. Cases in Finance. 3 Units.

This course applies the case study method applied to a variety of business situations that teaches students to think on their feet, develop presentation skills and hone business judgment. The objective of the course is to strengthen students' conceptual understanding and problemsolving skills. It is intended to complement the two course sequence in corporate finance (BAFI 355 and BAFI 358) by applying these concepts to real world problems. Topics covered include cash flow estimation and corporate valuation, financial planning and ratio analysis, financing using internal and external sources, capital budgeting and managerial options, capital structure, payout policy, financial strategy, public equity analysis (including initial public offerings), mergers and acquisitions and leveraged buyouts. The course envisages an extensive use of case studies and simulation exercises. Prereq: BAFI 355.

BAFI 360. Independent Study. 1 - 18 Units.

This course is offered for candidates undertaking reading in a field of special interest. Permission of department chair required.

BAFI 361. Empirical Analysis in Finance. 3 Units.

This course is developed based on the feedback received from employers who have hired BS Management (finance) graduates in the past and will likely do so in future. The goal is to enable students to use financial econometrics to effectively analyze financial data. The course will draw on theoretical aspects of BAFI 355 but focus on developing financial analytic skills. The applied nature of the course comes from the use of real, rather than theoretical, data. In other words, in a real-world fashion, through the use of statistical methods to analyze real data, the student can address practical questions of high relevance to the Finance industry. The scope of the data as well as the quantitative methods used in such analysis often requires familiarity with computational environments and statistical packages. As such, another goal of the course is to familiarize the student with at least one such environment. Prereq: BAFI 355 and OPRE 207.

BAFI 362. Advanced Analytics in Credit Risk Management. 3 Units.

The objectives of this course include understanding important quantitative risk models, risk measurement tools and explaining implications for risk management and investment decisions. Data will be used from Bloomberg and other intra-day data sources to estimate models and evaluate results in many areas of finance. At the end of the course students will: (i) understand and apply analytical models to real financial market problems, (ii) be exposed to debt, credit, and derivatives markets and associated career opportunities in applied analytics and (iii) be exposed to bank risk management skills and applications. This course is designed to be focused and intense, while also being very aligned with the best practices in the financial industry today. Microsoft Excel, because of its flexibility, will be the primary source of practical experience, though the course may also incorporate other computer tools/languages. Prereq: OPRE 207 and BAFI 355.

BAFI 364. Real Estate Finance. 3 Units.

This course examines real estate as an asset class and provides students with the fundamentals of real estate finance, focusing on areas such as: investment decision making, financing strategies, investment strategies within residential real estate, commercial real estate valuation, development of new sites, and an overall discussion of the real estate markets. The course contains a mixture of lectures, guest speakers, handon case discussions and potential site visits. It serves as a foundational course for students looking to pursue careers in the real estate industry, but it is also open to students who wish to gain a deeper understanding of the real estate investment process. Prereq: BAFI 355.

BAFI 365. Options and Other Derivatives. 3 Units.

This course is designed to introduce students to the theoretical and practical aspects of financial futures, options, and other derivatives. The markets for these instruments have grown enormously and have generated a profusion of innovative products and ideas, not to mention periodic crises. Derivatives have become one of the most important tools of modern finance. The goal is for students to understand the principles of how these important instruments and markets work. Prereq: BAFI 355.

BAFI 403. Corporate Financial Technology. 3 Units.

This course is focused on the many aspects of the development in Financial Technology from recent notable successes to the current edge and thoughts about the future. Topics covered will include "FinTech" Applications, Incubators and Angels, Block Chains, Crypto-currencies, Crowdfunding, and Payment Schemes. Topics can change from semester to semester, in tune with changing technology. Offered as BAFI 403, FNCE 403 and FTEC 403.

BAFI 404. Financial Modeling. 3 Units.

This is a course about financial modeling. It covers a range of topics in the field of financial economics. Each topic is chosen because it lends itself to financial modeling. The primary focus of the course is to relate the theory of finance to practical and usable spreadsheet models that will assist a financial manager with a firm's investment and financing decisions. Spreadsheet models have been the dominant vehicle for finance professionals to practice their trade. This course will utilize Excel and challenge the student to improve their finance and modeling skills. Students will improve their familiarity with financial data analysis through various exercises that incorporate completed models. In summary, the course is designed to increase your practical understanding of core concepts in finance, help you develop hands-on spreadsheet modeling skills, and strengthen your ability to perform financial data analysis within an Excel model. Prereq: MBAC 504 or MBAP 405.

BAFI 420. Health Finance. 3 Units.

Exploration of economic, medical, financial and payment factors in the U.S. healthcare system sets the framework for the study of decisions by providers, insurers, and purchasers in this course. The mix of students from various programs and professions allows wide discussion from multiple viewpoints. Offered as BAFI 420 and HSMC 420. Prereq: (MBAP 402 or MBAC 502 or ACCT 401H) and Master of Healthcare Management students only.

BAFI 428. Financial Strategy and Value Creation. 3 Units.

The intersection between the theory of perfect markets and the reality of market imperfections provides the basis for the exploration of value creation in this course. Opportunities in both product and financial markets are explored using case studies to develop a framework for strategic financial decisions.

BAFI 429. Investment Management. 3 Units.

This course explores the characteristics of financial investments and markets and develops modern techniques of investment analysis and management. The goal is to help students develop a level of analytical skill and institutional knowledge sufficient to make sensible investment decisions. Topics include: an overview of stock, debt and derivative asset markets, practical applications of modern portfolio theory, equilibrium and arbitrage-based approaches to capital market pricing, the debate over market efficiency, the term structure of interest rates, bond portfolio management, and uses of derivative assets in investment portfolios. Prereq or Coreq: MBAC 504 or MBAP 405.

BAFI 430. Derivatives and Risk Management. 3 Units.

This course is intended to give students an understanding of options and futures markets both in theory and practice. The emphasis is on arbitrage and hedging. The course concentrates on listed common stock and index contracts as well as commodity markets. Various theories for trading strategies are studied. Prereq or Coreq: MBAC 504 or MBAP 405.

BAFI 431. Fixed Income Markets and Their Derivatives. 3 Units.

This class is concerned with fixed income securities, interest rate risk management, and credit risk. Fixed income securities account for about two thirds of the market value of all outstanding securities, and hence this topic is important. The course covers the basic products of fixed income markets including treasury and LIBOR products, such as interest rate swaps. Risk management and hedging strategies are covered as well as selected topics in credit risk models and mortgage-backed securities. Prereq: BAFI 430.

BAFI 432. Corporate Risk Management. 3 Units.

This is a risk management course aimed at participants who wish to enhance their understanding of the risks faced by corporate firms, both financial and non-financial, learn techniques to identify and measure these risks, and understand how derivatives and risk management solutions can be used to manage these risks, create value, and advance the strategic goals of the firm. Offered as BAFI 432 and FNCE 432. Prereq: MBAP 405 or MBAC 504 or MBAC 505.

BAFI 433. Quantitative Risk Modeling. 3 Units.

This course is designed to help students learn quantitative models for estimating risk in various financial settings for different types of financial institutions (banks, hedge funds, and others). It is a very hands-on course where students will become familiar with several state-of-the-art quantitative risk models as well as their detailed implementation procedure in the real world. The course uses several inclass Excel exercises to illustrate the models as well as their practical implementation using real financial data. Offered as BAFI 433 and FNCE 433 and FTEC 433 Prereq: MBAC 504 or MBAP 405.

BAFI 434. Financial Analytics and Banking. 3 Units.

This course will cover empirical and analytical aspects of banking, including loan origination, syndication, sales, stress-testing and securitization; capital adequacy, regulation and supervision; methods of measuring and managing value at risk, credit risk, interest rate risk, liquidity risk, and other risk; credit market information, feedback, and signaling. Offered as BAFI 434 and FNCE 434. Prereq or Coreq: MBAC 504 or MBAP 405.

BAFI 435. Empirical Finance. 3 Units.

This course provides an introduction to empirical analysis and research in finance. This involves the management of empirical datasets and the aspects of quantitative applications of finance theory. The goal is to enable the student to deal with the need to analyze complex and large financial and economic datasets that is present in many fields of the financial profession. The scope of the data as well as the quantitative methods used in such analysis often requires familiarity with robust computational environments and statistical packages. As such, another goal of the course is to familiarize the student with at least one such environment. Applications are conducted using real financial and economic data. The course draws on the theoretical aspects of the subjects covered, but mainly focuses on the practical matters required to undertake an empirical analysis of financial topics--e.g., the definition of the research question, the datasets required, the computational needs, and, then, the implementation. The course enables the student to evaluate outstanding financial research as well as to conduct his or her own research. Offered as BAFI 435 and FNCE 435. Prereq or Coreq: MBAC 504 or MBAP 405.

BAFI 440. Financial Decisions Modeling and Analytics. 3 Units.

The firm is a nexus of contracts among its various stakeholders (e.g., managers, shareholders, debt holders). In this course, we will examine Valuation, Quantitative Analysis of Real Options, Asymmetric Information, Agency Cost, Incentive Contracts and Performance Metrics, Regulation and Reputation. The takeaway learnings from this course are: (a) Understanding how value can be created or destroyed, (b) Measuring/ quantifying value using financial big data, (c) Understanding the links between capital structure and asymmetric information, market reactions and signaling, agency and management incentives, taxes and shareholder, bondholder conflicts, (d) Understanding the links between payout policy and informational content, market reaction, stock returns and signaling, and clientele effects, and (e) design of Performance Metrics. We will download corporate financial data (financial big data) from research databases, and conduct empirical analysis to understand the value implications of financial decisions. Excel/SAS will be used. We will analyze case studies and real-world events. Offered as BAFI 440 and FNCE 440. Prereq: MBAP 405 or (MBAC 504 and MBAC 505).

BAFI 444. Entrepreneurial Finance. 3 Units.

The objective of this course is to introduce students to the issues of financial management and capital formation in new ventures. The course will address issues of estimation of cash requirements, development of pro forma financial plans, firm valuation and the process and tools used in raising debt and equity financing. Bootstrapping, angel investing, venture capital, strategic alliances and initial public offerings will be covered. The emphasis is on the entrepreneur and how he/she can assess financial needs and develop a sensible plan for acquiring financial resources in a manner that is consistent with their financial needs and other strategic goals. Offered as BAFI 444 and FNCE 444. Prereq or Coreq: BAFI 420, MBAC 504, MBAP 405 or Master of Engineering & Management students.

BAFI 450. Mergers and Acquisitions. 3 Units.

This course examines the economic rationale and motivation for the different merger and acquisition and recapitalization activities undertaken by firms and individuals in the U.S. market. Emphasis is on the comparable publicly traded proxy company, comparable "change of control" transaction, and discounted cash flow methods of valuing a firm. The class will also review the different types of debt and equity capital employed to fund mergers and acquisitions and recapitalizations, how senior lenders and equity investors structure their loans and/or investments, and how investors realize the gains through different exit strategies. The legal and tax ramifications of various forms of M&A activity are also discussed. The course gives the student an excellent understanding of the role that senior commercial banks, insurance companies, pension funds, LBO funds, investment banking firms, and venture/growth capital investors play in mergers and acquisitions and will strengthen the students' ability to value a business enterprise. Prereq: MBAC 504 or MBAP 405.

BAFI 460. Investment Strategies. 3 Units.

This course provides a broad survey of some of the main strategies used by hedge funds today. Through exercises and projects, the hedge fund strategies will be presented using real data. Students will learn to use a methodology referred to as "back testing" in order to evaluate hedge fund strategies. The course will also cover institutional details related to short selling, liquidity, margin requirements, risk management, and performance measurement. Since hedge funds today use advanced modeling techniques, the course will require students to analyze and manipulate real data using mathematical modeling. The objective of the course is for students to gain practical knowledge about creating, back-testing, and implementing hedge fund trading strategies. Offered as BAFI 460 and FNCE 460. Prereq: MBAC 504 and MBAC 505.

BAFI 480. Global Banking & Capital Markets. 3 Units.

This course will expose students to Banking and Capital Market Structure, Practices, and Regulations in North America, Europe, as well as Asia. Students will learn about structure of the financial services industry in different parts of the world, the history and evolution of the regulatory frameworks in this industry, and its consequent impact on financial and economic development as well as risk. Several case studies are used to expose students to different issues and questions that arise in the day-today jobs of financial managers in this industry. Offered as BAFI 480 and FNCE 480. Prereq: MBAC 504 or MBAP 405.

BAFI 491. Python Programming w Appl in Finance. 3 Units.

There are two parts to this course. (i) In the first part we learn the basics of Python programming language by solving a sequence of rather simple problems each focusing on broadening your knowledge. At each stage we introduce important commands of Python and slowly learn the structure of object oriented programming with Python. The objective is to make you Python literate. (ii) The second part of the class is for you to tackle significant financial problems either in risk management or in corporate finance using the Python language as the primary tool to do the analysis. You will develop a series of financial models in your track and then tackle two major projects which will utilize all the skills developed. Offered as BAFI 491 and FNCE 491. Coreq: BAFI 430.

BAFI 501. Special Problems and Topics. .75 - 18 Units.

This course is offered, with permission, to students undertaking reading in a field of special interest.

Business Law (BLAW)

BLAW 331. Legal Environment of Management. 3 Units.

This course will provide an overview of the legal environment in which business transactions take place. Through coverage of a number of topical areas, the student will be given a broad understanding of how the law impacts upon the daily decisions of managers. More specifically, the student will be better able to identify and understand how the legal issues facilitate or hinder the conduct of business. Topics covered will include contracts, property, products' liability, employment law, and corporate law. Special emphasis is placed on those regulatory areas of greatest interest to modern business. Offered as BLAW 331 and BLAW 417.

BLAW 411. Business and Law Colloquium. 3 Units.

This course will bring together law students, business students, mid-level attorneys and senior leaders in the legal field for a one-semester weekly colloquium. Even though women have represented approximately half of law-school graduates for a number of years, women represent only 16% of law firm equity partners and even fewer corporate General Counsels. This course aims to offer an introduction to the business skills that both women and men will need to rise to the highest levels of law practice and organizational leadership. Each week will focus on a different aspect of law and business. The curriculum will include sessions focused in financial management, business development, communication skills, and intercultural business and law practices. Offered as LAWS 5432 and BLAW 411.

BLAW 417. Legal Environment of Management. 3 Units.

This course will provide an overview of the legal environment in which business transactions take place. Through coverage of a number of topical areas, the student will be given a broad understanding of how the law impacts upon the daily decisions of managers. More specifically, the student will be better able to identify and understand how the legal issues facilitate or hinder the conduct of business. Topics covered will include contracts, property, products' liability, employment law, and corporate law. Special emphasis is placed on those regulatory areas of greatest interest to modern business. Offered as BLAW 331 and BLAW 417.

Business Technology (BTEC)

BTEC 400. Responsible and Ethical Digital Innovation Project Practicum. 3 Units.

Digital innovation is one of the most important strategic topics in today's business. As our society continues to move deeply into a digital economy and companies are able to use more powerful algorithms and models to analyze detailed digital trace data from users, responsible and ethical considerations are no longer after-thoughts but should be the strategic focus of any firm that is trying to innovate with digital technology. This is a project-based course where students learn the practice of responsible and ethical digital innovations using the latest digital tools. Responsible and ethical digital innovations (REDIs) require the blend of five core skill sets: (a) technical skills in emerging digital technology (such as artificial intelligence, mobile and wearable technology, crypto computing, cloud-based micro-service architecture, and the Internet of Things), (b) an ability to gain deeper insights on user needs through human-centered design thinking and translate them into a set of design features, (c) a robust understanding on technical, legal, and business dimensions of responsible and ethical digital innovations. (d) an ability to design an innovative business model and build a robust financial model, and (e) an ability to lead an agile team of diverse members for continuous service delivery. Each of these skills needs to be supported through a set of digital tools and frameworks that are specifically designed to support to support responsible and ethical digital innovation practices. Any responsible and ethical digital innovation projects must begin with deep user research with ethnographic research methods, a careful analysis of the current value network, legal and technical analyses of ethical requirements of the key features, an agile development process of prototypes and experimentations to build a minimally viable product (MVP), and financial modeling of the business model based on robust market research. It requires collaborations across user research, UX design, front-end development for mobile and web, back-end development, cloud architecture, and increasingly mechanical engineering. In this course, students will have a unique learning opportunity to learn the actual contemporary digital innovation practice, working on real-world projects in a small agile multi-disciplinary team. The goal is to equip students with the necessary technical and managerial skills. The target audience is the students who want to become product strategists, product managers, product owners, agile scrum masters, UX designers, full-stack developers, or digital innovation consultants. All projects are client funded and students are primarily responsible to meet the client's requirements within a semester. Students will be assigned to a multi-disciplinary team of 6-8 students (following Amazon's two-pizza rule). Students are expected to spend 2 - 3 hours per week in regular team meetings and workshops. In addition, each student is expected to work 3 - 5 hours either individually or in a small team to complete their individual tasks. Students are led by co-instructors including a faculty member who has domain expertise for the project and an industry coach who manage the agile project. The faculty will serve as the project executive. The coach will serve as the project manager initially with a student apprentice who will play a larger role in managing the project. Students are expected to pick up necessary technical tools and resources, self-taught, and use it for the project. If necessary, xLab will provide technical support by connecting students to technical experts or online resources. In general, students have a basic understanding of the necessary technological frameworks so that they can learn specific tools that they are required to use for the project.

BTEC 412. Algorithmic Trading. 3 Units.

Finding the right algorithm to automatically and successfully trade in financial markets is the holy grail in finance. Not too long ago, Algorithmic Trading was only available for institutional players with deep pockets and lots of assets under management. Recent developments in the areas of open source, open data, cloud computing and storage, as well as online trading platforms, have leveled the playing field for smaller institutions and individual traders - making it possible to get started in this fascinating discipline being equipped with a modern notebook and an Internet connection only. Coding experience required or consent of instructor required. This course aims to: - Trace the evolution of quantitative trading strategies, - Expose students to the landscape of different market datasets (e.g., Alpha Vantage), - Discuss linear regression models and logistic regression models, - Introduce select machine learning techniques, - Evaluate the performance of these trading strategies, - Provide an introduction to textual analysis Offered as BTEC 412, FNCE 412, and FTEC 412.

BTEC 420. Introduction to Programming for Business Applications. 3 Units.

This course will introduce students to the basics of programming logic utilizing the Python programming language and environment. The course will help students understand how to apply programming solutions and related algorithmic thinking to solve common business and decision problems. This class is a great introduction into programming logic, it just happens to use Python. This course will teach the fundamentals of programming logic, which could be applied to any programming language available today or into the future. Learning Objectives: Upon completion of this course students should have a foundational knowledge of how to use variables, operators, manipulate strings, loops, functions, and basic array manipulation all through Python programming language. The course will culminate with a final project where students will be divided into groups with each group solving a different small business problem. The final submission will require a joint white paper submission that demonstrates the following learned objectives: problem research, scope, architect, and design a potential solution using python environment. A sample of the implemented Python code that was used to solve this problem will be required for final submission. Each student must have access to a computer that can be brought to class. No programming experience is required. Downloading and installing Python is covered at the start of the course. Basic computer skills: surfing websites, running programs, saving and opening documents, etc.

BTEC 493. Blockchains, Cryptocurrencies, and Cryptoventures. 3 Units.

It behooves today's business leaders to be well acquainted with blockchain technologies and AI, two seemingly disparate technologies that have the potential to fundamentally disrupt a wide range of businesses. The popularity of blockchain technologies has increased exponentially since the release of bitcoin in 2009. While bitcoins garnered a lot of attention during the initial days, the focus has shifted over time to the underlying technology: blockchain. This wildly innovative technology has made possible tasks that were hitherto deemed implausible: validate ownership in a digital asset, verify the true state of a transaction without relying on a costly intermediary etc. Accurate predictions and sound judgements are two critical ingredients of any decision making process. While the jury is still out on whether algorithms can make sound judgements, recent developments in a field called machine learning (and its sub-field, deep learning) have led to dramatic improvements in the accuracy of predictions made by these algorithms. Significantly, this gain in accuracy has been accompanied by a reduction in overall costs. These in turn have spurred the recent interest in Al. Organizations that have enabled AI at the enterprise level appear to be making more informed decisions and innovating new products. In this course, we will unpack these technologies and examine a wide range of relevant business use cases. Our objective is to provide a practical introduction to these key technologies and their business implications. We focus on business perspectives, rather than on the technical dimensions. Fittingly, this course is open to all graduate students of Weatherhead School (MBA and all specialty Masters). Students are not expected to have any specific programming background; however, a basic understanding of statistics is required to better appreciate the discourse on Artificial Intelligence. Offered as BTEC 493, FNCE 493 and FTEC 493. Prereq or Coreq: MBAC 504 or MBAP 405.

BTEC 494. Artificial Intelligence for Financial Modeling. 3 Units. This is a hands-on course on Artificial Intelligence (A.I.) where the emphasis is not only on understanding the theoretical underpinnings of various AI models but also on building, evaluating, and critiquing A.I. models as they apply to the finance industry. This course begins with an introduction of Machine Learning models; various key ideas such as bias-variance tradeoff, cross-validation, regularization techniques are introduced with relevant examples from Finance. The course then proceeds to discuss Artificial Neural Networks and its relevance to Deep Learning. Foundational ideas such as back-propagation are discussed in sufficient detail; we also lay a lot of emphasis on evaluating the performance of all these models. A key objective of this course is help students build cutting-edge A.I. models that are ready for prime time, i.e., real-life applications. Fittingly, we work with several real-life datasets and case studies from banking and finance. We will work with three case studies, each of which span multiple sessions. -In the first case study, students use Machine Learning algorithms to understand how imbalanced datasets are handled in real-life. -In the second study, students use time series data and learn not only about the power of regularization techniques but also to highlight the prominence of A.I. in financial markets. -In the third case study, students learn how to use cutting-edge Deep Learning models to extract sentiments from disparate news sources; these are in turn used to generate trading strategies. By contrasting the effort that goes into and the payoff obtained from Machine Learning and Deep Learning models, students gain an intuitive appreciation of both these classes of models. Offered as BTEC 494, FNCE 494 and FTEC 494.

Business Analytics & Intelligence (BUAI)

BUAI 400. Linear Algebra. 1 Unit.

The objective of this one-credit hour course is to provide a basic working knowledge of material in linear algebra that is relevant to the Master of Supply Chain Management and Master of Business Analytics & Intelligence programs. This background material includes geometric and algebraic properties of vectors and matrices together with operations that can be performed on them. The use of vectors and matrices in solving systems of linear equations is taught. Offered as BUAI 400 and SCMG 400. Prereq: For Master of Business Analytics & Intelligence students only.

BUAI 406A. Operations Management I. 1.5 Unit.

Operations managers, ranging from supervisors to vice presidents, are concerned with the production of goods and services. More specifically, they are responsible for designing, running, controlling and improving the systems that accomplish production. This course is a broad-spectrum course with emphasis on techniques helpful to the practice of management at the analyst level. Its goal is to introduce you to the environments, to help you appreciate the problems that operations managers are confronted with, and provide you with the tools to address these problems. Operations Management spans all value-adding activities of an organization including product and process design, production, service delivery, distribution network and customer order management. As global competition in both goods and services increases, a firm's survival depends upon how well it structures its operations to respond quickly to changing consumer needs. Thus, it is essential for all business managers to acquire an understanding of operations management to maintain their competitive advantage. This course provides students with the basic tools needed to become an analyst in Supply Chain and Operations Management. This course provides an overview of Process analysis, Capacity management, Queuing system and analysis. Prereq: For Master of Business Analytics & Intelligence students only.

BUAI 406B. Operations Management II. 1.5 Unit.

Operations managers, ranging from supervisors to vice presidents, are concerned with the production of goods and services. More specifically, they are responsible for designing, running, controlling and improving the systems that accomplish production. This course is a broad-spectrum course with emphasis on techniques helpful to the practice of management at the analyst level. Its goal is to introduce you to the environments, to help you appreciate the problems that operations managers are confronted with, and provide you with the tools to address these problems. Operations Management spans all value-adding activities of an organization including product and process design, production, service delivery, distribution network and customer order management. As global competition in both goods and services increases, a firm's survival depends upon how well it structures its operations to respond quickly to changing consumer needs. Thus, it is essential for all business managers to acquire an understanding of operations management to maintain their competitive advantage. This course provides an overview of Quality management, Material Requirements planning, Inventory management, and Supply Chain management. The emphasis of the course is on both real world applications and technical problem solving. Several manufacturing and non-manufacturing environments will be discussed explicitly, like health care, insurance, hotel-management, airlines and government related operations. Also we will explore the interface of operations management with other functional areas such as marketing, finance, accounting, etc. This coursework includes individual and group assignments, case analyses and experiential learning through simulations and educational games. Prereq: For Master of Business Analytics & Intelligence students only.

BUAI 407A. Managerial Marketing I. 1.5 Unit.

This course is part one of the Core Marketing Management class, as taught in typical MBA programs, including our own. Marketing management is defined as the 'art and science of choosing target markets and getting, keeping, and growing customers through creating, delivering, and communicating superior customer value' (Kotler and Keller 2012, p. 3). This course addresses the management challenges of developing products and services that profitably deliver value including selecting target markets and designing the best combination of marketing variables to carry out a firm's strategy. Prereq: For Master of Business Analytics & Intelligence students only.

BUAI 407B. Managerial Marketing II. 1.5 Unit.

This course is part one of the Core Marketing Management class, as taught in typical MBA programs, including our own. Marketing management is defined as the 'art and science of choosing target markets and getting, keeping, and growing customers through creating, delivering, and communicating superior customer value' (Kotler and Keller 2012, p. 3). This course addresses the management challenges of developing products and services that profitably deliver value including selecting target markets and designing the best combination of marketing variables to carry out a firm's strategy. Prereq or Coreq: BUAI 407A.

BUAI 410. Accounting and Financial Management. 3 Units.

This course focuses on learning the language of business, how basic accounting information is reported and analyzed, and how basic financial principles can be applied to understanding how value is created within an enterprise. This course is intended for individuals who have a limited background in accounting, finance and business. Most of the exercises will involve evaluating and building models in Excel. Teaching objectives are fairly straightforward: 1. Provide you with a basic understanding of the key principles of accounting and finance. We will quickly cover material that is typically covered in a three-course sequence (Introductory Accounting and Finance I and II). We will fly at a fairly high level, but we want to make sure you understand the basic concepts. 2. Apply these concepts to real (but straightforward) business situations, to gain a better understanding of how companies utilize accounting and financial information. 3. Time permitting, explore how these concepts can be applied to securities, mergers and acquisitions and leveraged buyout transactions, with a specific emphasis on how these concepts are likely to surface in your role in such transactions. Prereq: For Master of Business Analytics & Intelligence students only.

BUAI 411. Operations Analytics: Deterministic. 3 Units.

The first half of the course provides a practical coverage of linear programming, a special type of mathematical model. The art of formulating linear programs is taught through the use of systematic model-building techniques. The simplex algorithm for solving these models is developed from several points of view: geometric, conceptual, algebraic, and economic. The role and uses of duality theory are also presented. Students learn to obtain and interpret a solution from a computer package and how to use the associated output to answer "What-happens-if ... " questions that arise in post-optimality analysis. Specific topics include: problem formulation, geometric and conceptual solution procedures, the simplex algorithm (phase 1 and phase 2), obtaining and interpreting computer output, duality theory, and sensitivity analysis. The second half of this course provide a practical approach to formulating and solving combinatorial optimization problems in the areas of networks, dynamic programming, project management (CPM), integer programming, and nonlinear programming. The art of formulating problems, understanding what is involved in solving them, and obtained and interpreting the solution from a computer package are shown. A comparison with formulating and solving linear programming problems is provided as a way to understand the advantages and disadvantages of some of these problems and solutions procedures. Recommended preparation: Knowledge of Excel, one semester each of undergraduate linear algebra and undergraduate calculus (derivatives); or consent of instructor. Prereq: For Master of Business Analytics & Intelligence students only.

BUAI 432. Operations Analytics: Stochastic. 3 Units.

This course covers modeling and analysis of discrete-event dynamical systems using computer simulations. Topics include an introduction to simulation as a modeling tool, with emphasis on understanding the structure of a simulation model and how to build such models, model validation, random number generation, simulation languages, statistical simulation output analysis, design of simulation experiments and selected current research topics. Prereq: BUAI 433 or MSBA 433. Prereq or Coreq: BUAI 406A and BUAI 406B.

BUAI 433. Foundations of Probability and Statistics. 3 Units.

Data of many kinds are typically available in practice, but the challenge is to use those data to make effective professional decisions. This software-intensive course begins with useful descriptions of data and the probability theory foundation on which statistics rests. It continues to statistics, including the central limit theorem, which explains why data often appear to be normally distributed, and the Palm-Khintchine theorem which explains why data often appear to have a Poisson distribution. The remainder of the course focuses on regression and forecasting, including detecting and overcoming some of the deadly sins of regression, and the surprising flexibility of regression models. Recommended preparation: One semester of undergraduate calculus or consent of instructor. Prereq: For Master of Business Analytics & Intelligence students only.

BUAI 434. Data Mining & Visualization. 3 Units.

Data Mining is the process of identifying new patterns and insights in data. As the volume of data collected and stored in databases grows, there is a growing need to provide data summarization (e.g., through visualization), identify important patterns and trends, and act upon the findings. Insight derived from data mining can provide tremendous economic value, often crucial to businesses looking for competitive advantages. This course is a survey of data visualization methods, supervised and unsupervised learning techniques, and modern tools for discovering knowledge for business decisions. Prereq or Coreq: BUAI/MSBA 433 or SCMG/MSOR 433 or OPRE 433.

BUAI 435. Marketing Models and Digital Analytics. 3 Units.

Models & analytics suitable for digital marketing data are the focus of this course. The objective to develop analytical skills for making intelligent decisions about marketing investments that create value and build competitive advantage. In short, to build capabilities for marketing ai-analytics for insights. The course content and assignments are designed to (a) enable student learning by using real- world problems and data, (b) emphasize the Problem-Data-Analytics interdependence for effective problem solving, and (c) engage with thoughtful practitioners of digital data analytics to inform current practices and opportunities. Prereq or Coreq: MBAC 506 or BUAI/MSBA 407A. Prereq: BUAI/MSBA 433 or SCMG/MSOR 433 or OPRE433.

BUAI 444. Predictive Modeling. 3 Units.

Predictive modeling is a set of procedures and tools for hypothesizing, testing and validating a model to explain and predict the probability or likelihood of a future event, or outcome. A wide range of procedures and tools are available for predictable modeling, and this course will cover a select set of topics with wide applicability. Through applications and case studies involving real-life data, the course will emphasize managerial problem solving. To build models is to capture managerial problem formulation, and to test/validate them is to confront managerial hypotheses with empirical observations. Problem solving is a creative act rooted in validated evidence of managerial hypotheses testing. Prereq or Coreq: BUAI/MSBA 433 or SCMG/MSOR 433 or OPRE 433.

BUAI 445. Advanced Marketing Analytics. 3 Units.

The use of quantitative data and analysis has become very popular in improving decision making in various decision areas of marketing, such as segmentation, positioning, advertising, promotions, new product development and pricing. It is increasingly common for marketing managers to be challenged by top managers, to show the value of marketing expenditures to an organization's financial well-being. This course will introduce a variety of data based decision-aids in the marketing area that will often focus on those metrics. In addition, the course will introduce you to SAS, a very popular tool that analysts in the business and economics field have been using for decades now and has the potential to open some doors for you when it comes to internships and jobs. The course will also use Python in parallel to re-emphasize what you have already learnt in previous classes. Prereq or Coreq: BUAI/MSBA 407A or MBAC 506. Prereq: (BUAI/MSBA 433 or OPRE 433 or SCMG/ MSOR 433) and (BUAI 492 or MSOR 492 or BTEC 420).

BUAI 446. Machine Learning and Artificial Intelligence in Business Analytics. 3 Units.

Advances in computational analytics including Machine, Deep and Statistical Learning (ML) provide powerful methods for developing mathematical "learning" models that can autonomously parse, learn from, and make predictions from data to improve performance with "experience". In deep learning, large neural networks are leveraged to achieve artificial intelligence (AI), enabling machines to mimic human behavior. This course covers principles, algorithms, and applications of machine learning from a business analytics perspective. Specifically, the course will provide a practical understanding of modern machine learning techniques including regression and classification methods, resampling methods and model selection, regularization, perceptron and artificial neural networks, tree-based methods, support vector machines and kernel methods, and grouping methods. Prereq or Coreq: BUAI/MSBA 434 or BUAI/MSBA 444. Prereq: Master of Business Analytics & Intelligence students only and (BUAI/MSBA 492 or SCMG/MSOR 492 or BTEC 420).

BUAI 460. Experiential Learning in Business Analytics. 3 Units.

This course provides an opportunity for students to apply business analytics techniques to realworld data sets, usually sourced from public platforms like Kaggle, but real industry projects are also permissible. About three datasets will be identified by the instructor before the class starts and potentially two teams will go after each dataset/problem of practice. The focus is on solving complex business problems in marketing, operations and other business areas through substantial group projects. Students will work in teams of 3-4 to develop, implement, and present data-driven solutions. The course will emphasize collaboration, practical application of analytical tools, and the communication of results to a non-technical audience. Prereq: BUAI 406A, BUAI 406B, BUAI 433, BUAI 434, BUAI 444 and BUAI 492. Coreq: BUAI 407A, BUAI 407B, BUAI 432, BUAI 445 and BUAI 485B.

BUAI 485B. Team Development. 1.5 Unit.

This course is unique in the sense that its primary focus is on the student working in teams. In this course the student will assess their team interaction based on team assignments simulated and action learning type projects, presenting to the class as a team, engaging in various experiential activities, participating one team coaching session, working with a team, and expanding their knowledge of team leadership and membership skills and abilities. They are also expected to engage with projects external to the university (similar to an action learning project). Prereq: For Master of Business Analytics & Intelligence students only.

BUAI 492. Foundations of Python Programming. 1.5 Unit.

Python is an object-oriented programming language that can interact with the world wide web as well as Excel and other programming languages like VBA. As such, Python has gained popularity and is becoming an industry standard in many areas, including supply chain management. In addition to assignment, if/then, and for/ while statements, in this course you will learn about object-oriented programming and how to implement those ideas with appropriate data structures. You will also learn how to use libraries that others have created, such as Numpy for numerical calculations (like working with vectors, matrices, and solving systems of linear equations). In addition to individual homeworks, you will solve an assigned project in groups and make a final presentation to the class with PowerPoint. Being able to communicate your model and results is part of learning to work effectively with others in an organization, which is a goal of the supply chain program. All of this is designed to enable you to build and solve models that help organizations make good decisions. Offered as BUAI 492 and SCMG 492. Prereq: For Master of Business Analytics & Intelligence students only.

BUAI 499. Capstone Project in Business Analytics. 0 Unit.

This course is focused on engaging Master of Business Analytics students in a capstone experience. Students will be provided with analytics problems with data from local companies and will be asked to leverage the broad range of skills, tools and approaches introduced throughout the program to analyze the data. They will also present a final report to the sponsoring organization. Prereq: For Master of Business Analytics & Intelligence students only.

BUAI 501. Independent Study. 1 - 18 Units.

An independent study course offered, with permission, to Master of Business Analytics and Intelligence students undertaking reading in a field of study.

Design & Innovation (DESN)

DESN 210. Introduction to Programming for Business Applications. 3 Units.

This course will introduce students to the basics of programming logic utilizing the Python programming language and environment. The course will help students understand how to apply programming solutions and related algorithmic thinking to solve common business and decision problems. This class is a great introduction into programming logic, it just happens to use Python. This course will teach the fundamentals of programming logic, which could be applied to any programming language available today or into the future. Learning Objectives: Upon completion of this course students should have a foundational knowledge of how to use variables, operators, manipulate strings, loops, functions, and basic array manipulation all through Python programming language. The course will culminate with a final project where students will be divided into groups with each group solving a different small business problem. The final submission will require a joint white paper submission that demonstrates the following learned objectives: problem research, scope, architect, and design a potential solution using python environment. A sample of the implemented Python code that was used to solve this problem will be required for final submission. Each student must have access to a computer that can be brought to class. No programming experience is required. Downloading and installing Python is covered at the start of the course. Basic computer skills: surfing websites, running programs, saving and opening documents, etc. Counts as a Quantitative Reasoning course.

DESN 302. Creativity in Design & Business: Sources of Perception, Imagination, & Creative Thinking. 3 Units.

The goal of this course is to develop skills and techniques for creative problem solving. The course is for anyone interested in design, the development of new products and services, and strategies for change in organizations and society. It is useful wherever we face challenging situations that require imagination, new ideas, and innovative approaches in a rapidly changing world. At its core, creativity is an issue of perception. Learning to change one's perception from what is known, comfortable, and familiar to what is unknown and potentially valuable and rewarding is the challenge of this course. We will explore a wide variety of methods, techniques, and tools for encouraging new perceptions. There will be useful readings, but also exercises and projects for individuals and teams to develop new strategies of creative thinking. Offered as DESN 302 and ENTP 302.

DESN 308. Business Model Design and Innovation. 3 Units.

This course takes the perspective of entrepreneurs or business unit managers. The three basic questions that all entrepreneurs and intrepreneurs must answer is where to play, how to win and what to do. You have identified a group of customers for your product or service (where to play). Your first challenge is to know what features (Customer Attributes) your target customer will pay for. Innovative business models focus on a set of customer attributes that are usually very different from other industry incumbents that we call Focal Attributes. Your second challenge is to clearly state your profit logic -- how you will make money -how to win. The concept called Profit Objectives (similar but not the same as KPI and/or SMART objectives) allow you to operationalize the profit logic through specific and measurable deliverables. Your third challenge is building the value chain that can deliver these focal attributes (what to do). At this point, you have a good understanding of all the elements of your business model and in particular, how the focal attributes and the value chain align with the profit objectives. You will learn how to illustrate this alignment through a mapping process. Offered as DESN 308 and ENTP 308. Prereq: Junior standing or higher.

DESN 310. Systems Analysis and Design (SAD). 3 Units.

This course begins with business analysis and ends with information systems design. Students are introduced to tools and techniques enabling effective analysis, design and documentation of an information system application. The student learns methodologies that form the basis of systems design and engineering practices. Models that focus on the articulation of business functions, integrating process, data and behavioral abstraction form the core of formal methods in systems development using the Unified Modeling Language (UML). The course teaches students principles and skills that are essential to their function as system developers, participants and leaders of system development projects. Prereq: MIDS 301 and (ENGR 131 or CSDS 132 or DESN 210).

DESN 318. Entrepreneurship Through Acquisition II. 1.5 Unit.

Entrepreneurship through Acquisition (ETA) is the path to becoming an entrepreneur by buying and growing an established small business. Most ETA strategies incorporate the support of investors and advisors who provide capital and experience to help and mentor an ETA entrepreneur on their journey to find, acquire, and lead a small business. As part of the ETA curriculum, this course focuses on 1) defining the different types of ETA with a particular emphasis on search funds, 2) exploring the most common industries targeted by ETA entrepreneurs, including healthcare and software, and 3) the post-acquisition experience of leading a small business. The course draws on the direct experience of class guests and relatable case studies. In particular, the course will also utilize in-class role plays of real-world small business leadership scenarios. Offered as DESN 318 and DESN 420.

DESN 319. Entrepreneurship Through Acquisition III. 1.5 Unit.

This is one of three Entrepreneurship through Acquisition (ETA) courses. ETA is the path to becoming an entrepreneur by buying and growing an established small business. ETA III exposes students to the journey ETA entrepreneurs follow when going from employee to business owner, with emphasis on the "sponsored search" strategy. Course emphasis is on experiential learning components with class guests who are primarily ETA entrepreneurs and people who work closely with ETA entrepreneurs (e.g., investors, bankers, and other advisors) and case studies of over 40 Weatherhead Alumni and others who have become business owners using ETA strategies. Many ETA strategies incorporate support from investors and advisors who provide capital and experience to complement the ETA entrepreneur's efforts to find, acquire, and run a business. Becoming a business owner using ETA is challenging. However, when proven strategies are used, it can be much less risky than doing a "startup" around a less proven product or service. This course is designed to be relatable and practical, giving students direct exposure to what it takes to pursue this path and evaluate if it's right for them. Offered as DESN 319, DESN 419, and MGTE 419.

DESN 320. Database Management. 3 Units.

This course is a comprehensive introduction to data management in organizations. It establishes the data management foundation in the business major and can be taken as a course for students in data analytics. Topics include conceptual and logical data modeling, entity relationship and relational data modeling, and database design and implementation using the SQL programming language. Students will also be introduced with non relational data bases and big data applications. Students will complete exercises in database modeling, design and databased programming using SQL on a given data base environment to be determined later (Oracle, Open SQL etc). Prereq: ACCT 100 and (ENGR 131 or CSDS 132 or DESN 210).

DESN 321. Introduction to Information Security for Business. 3 Units.

This course provides a foundational understanding of information security principles and their application in business environments. Students will explore critical concepts, strategies, and technologies used to protect organizational data and systems. Emphasis is placed on understanding cybersecurity risks, implementing best practices, and navigating regulatory requirements. The course prepares students to identify, assess, and manage information security challenges in real-world business contexts. Prereq: MIDS 301.

DESN 322. Designing the User Experience (UX). 3 Units.

Ever deleted an app out of frustration? Or loved a product because it just works? That's User Experience (UX) Design in action--the difference between frustration and delight. In this course, we'll dive into how design, psychology, and technology shape user experiences. You'll learn to research, prototype, and create intuitive, engaging designs that people love. We'll also explore the complex relationship between technology and society through ethical lenses, including accessible, inclusive, traumainformed, and diversity-focused design. UX is best learned through thoughtful critique and hands-on practice. Expect to engage in personal reflections, group critiques, and real-world application of UX techniques. Sketching will be a key tool for communication, with dedicated in-class time each week. By the end, you won't just understand great UX-you'll have a portfolio-ready project to showcase your skills. Prereq: MIDS 301.

DESN 410. Leading Digital Innovation by Design. 3 Units.

A new wave of digital revolution is transforming every industrial sector. Powered by increasingly smaller yet potent microprocessors and sensors, a new generation of analytical tools, and ubiquitous wearable and mobile devices, companies can radically transform the way they interact with users and the way they create and capture value. Technology like Block Chain and AI are likely to fundamentally reshape how we think about firms and industries. Such changes make existing strategic frameworks and tools obsolete. In order to understand how and why digital technology changes the industrial landscape, companies must understand some of the fundamental characteristics of digital technology and how it demands new types of value creation logic. Be it a large corporation or a small start-up; or a government agency or a multinational enterprise; everyone is struggling to deal with the new digital reality. Yet, exactly how to use digital technology to create value is not clear. While all companies must understand how digital technology is fundamentally different from other forms of technology, ironically digital innovation is not about technology. Digital innovation is making digital technology meaningful and value to users. Therefore, digital innovation requires us to truly understand us (people), what we do, why we do what we do, what makes us happy, and what we consider meaningful. Therefore, digital innovation is a deeply humanistic exploration to make digital technology meaningful and valuable to us. In order to fully harness the transformative capacity of digital technology, we must gain deeper insights on people and their actions, meanings and values. In this experiential course, we use design as the primary tool to gain such humanistic insights, and work with real-world projects to apply those ideas and tools to build real digital innovations.

DESN 419. Entrepreneurship Through Acquisition III. 1.5 Unit.

This is one of three Entrepreneurship through Acquisition (ETA) courses. ETA is the path to becoming an entrepreneur by buying and growing an established small business. ETA III exposes students to the journey ETA entrepreneurs follow when going from employee to business owner, with emphasis on the "sponsored search" strategy. Course emphasis is on experiential learning components with class guests who are primarily ETA entrepreneurs and people who work closely with ETA entrepreneurs (e.g., investors, bankers, and other advisors) and case studies of over 40 Weatherhead Alumni and others who have become business owners using ETA strategies. Many ETA strategies incorporate support from investors and advisors who provide capital and experience to complement the ETA entrepreneur's efforts to find, acquire, and run a business. Becoming a business owner using ETA is challenging. However, when proven strategies are used, it can be much less risky than doing a "startup" around a less proven product or service. This course is designed to be relatable and practical, giving students direct exposure to what it takes to pursue this path and evaluate if it's right for them. Offered as DESN 319, DESN 419, and MGTE 419.

DESN 420. Entrepreneurship Through Acquisition II. 1.5 Unit.

Entrepreneurship through Acquisition (ETA) is the path to becoming an entrepreneur by buying and growing an established small business. Most ETA strategies incorporate the support of investors and advisors who provide capital and experience to help and mentor an ETA entrepreneur on their journey to find, acquire, and lead a small business. As part of the ETA curriculum, this course focuses on 1) defining the different types of ETA with a particular emphasis on search funds, 2) exploring the most common industries targeted by ETA entrepreneurs, including healthcare and software, and 3) the post-acquisition experience of leading a small business. The course draws on the direct experience of class guests and relatable case studies. In particular, the course will also utilize in-class role plays of real-world small business leadership scenarios. Offered as DESN 318 and DESN 420.

DESN 421. Entrepreneurship Through Acquisition I. 1.5 Unit.

Entrepreneurship Through Acquisition ("ETA") will give students frameworks and real-world solutions to use if they decide to pursue the acquisition and leadership of a company. The class will walk through the life cycle of a typical path to finding and running a business, including information on raising capital, searching for a company, buying a business, leading that business and then ultimately selling it. Approximately half of the course will go through critical points leading up to buying a business, while the other half will address some of the key issues executives face while running a company (identifying metrics, communicating with a team, interviewing, handling HR issues, etc.). Although the main focus will be on buying and running a business, the class is designed to be applicable to many other career paths including private equity, venture capital, entrepreneurship and general management. The class will utilize cases, assignments and / or readings in each lecture along with speakers who will give real life techniques that they use to excel in the particular area that the class is structured around. The class will be a mix of Zoom and recorded instruction.

DESN 425. Chief Executive Officer. 3 Units.

This course will take the perspective of the CEO in deciding the actions that lead to sustainable competitive advantage. We will study decisions that span from starting a small business to expanding beyond the core using mergers and acquisitions. We will also study how CEOs decide to exit a market. The successful CEO not only has to design the strategy for success but has to also design an execution plan. As the organization grows the importance of delegation to the right subordinates becomes increasingly critical. The course material includes case studies, decision briefs and presentations (virtual and in person) by senior executives. Decision briefs are short notes that have the same information that the CEOs had when starting the business. You will develop the strategy based on these decision briefs and will compare your suggestions to what was actually done by both successful and unsuccessful CEOs. Offered as DESN 425 and MGTE 424.

DESN 440. Design of Disruptive Business Models. 3 Units.

This course will explore the design of business models that disrupt traditional or established business patterns. With the shift toward services and human interactions as the foundation of many new companies, this course will focus on methods of inventing and developing business models that use digital technology, information, and service concepts to meet new needs in areas of retail, medical care, and other areas of business opportunity.

DESN 490. Business Model Innovation. 3 Units.

We will take the perspective of the business unit or an entrepreneur starting a business. The course will be built around defining the following as problems. Where to play, how to win and what to do. We will deconstruct many innovative business models. However, the learning objective for you is to understand a process by which you can design (reconstruct) similar innovative business models. The process of identifying a creative outcome is essentially a search task, equivalent to find valuable treasures in an unexplored space. One can find treasure by walking around randomly or following a well thought out search algorithm. The latter, however, is much more efficient, guarantees much higher payoff in the long term, and can be learned and replicated by any willing explorers. Example in Fossil Hunting.

DESN 491. Expansion and Diversification Strategy. 3 Units.

This course will help you to internalize a few core principles required to compete successfully, as well as to successfully expand a business. These core principles can be applied in any business – past and present. What will change is the MEANS of applying these principles as technologies change. So the smartphone is gradually eliminating the need for a dispatcher to connect a passenger to a taxi. However, the business that can match supply and demand better than competition will win irrespective of the means.

DESN 494. Managerial Consultancy. 3 Units.

Students will learn to match consulting methodologies with client needs and employ a step by step strategy development process applied to actual companies which are semester-long clients of the class. Accelerated career strategies in the consultancy business are featured as well as tactics for getting hired in the first place. The course views consultancy as a role rather than career and conceptualizes consultancy as a process of optimizing an organization's value creation potential and competitive advantage. Students should be able to apply the concepts regardless of career choice. Exposure to senior practicing consultants is featured.

DESN 501. Special Problems and Topics. 1 - 18 Units.

This course is offered, with permission, to students undertaking reading in a field of special interest.

DESN 527. Seminar in DESN. 3 Units.

This seminar addresses topics of current interest with a strong emphasis on research. It is intended primarily for the faculty and doctoral students of the DESN Department.

DESN 601. Special Topics in MIS. 1 - 18 Units.

This course is offered, with permission, to Ph.D. candidates undertaking reading in a field of special interest.

DESN 701. Dissertation Ph.D., 1 - 9 Units.

(Credit as arranged.) Prereq: Predoctoral research consent or advanced to Ph.D. candidacy milestone.

Doctor of Business Administration (DBAP)

DBAP 611. Theory and Practice of Collective Action. 3 Units.

The ability of autonomous and interdependent parties to coordinate actions, or to act cooperatively, affects a wide range of organizational and social problems. This course addresses the theory and practice of collective action in local, national and global contexts. Case studies of collective action problems, such as environmental protection, community revitalization, and the mobilization of interest groups will be discussed. Prereq: Must be enrolled in the Doctor of Business Administration Program.

DBAP 613. Leading Change. 3 Units.

Change is an enigma and yet sustained, desirable change (SDC) drives adaptation, growth and life itself. In this course, we will continuously attempt to answer two questions: What is the process of sustained, desirable change? and What is the role of a leader? Concepts from complexity theory will be used, including understanding the multilevel nature of SDC at the individual, dyad, team, organization, community, country, and global levels. Intentional Change Theory (ICT) will be used as the organizing concept for the changes studied. Leadership and its development will be examined by studying a number of topics and applying them to three major case studies: (1) yourself; (2) practice coaching with compassion; and (3) a major change project. This course will explore questions, such as: Who are effective leaders? How do they think and act? What makes us want to follow them? How are leaders developed? What is the role of emotional and social intelligence? How does a leader's mind, body, heart, and spirit affect their performance? Prereq: Must be enrolled in the Doctor of Business Administration Program.

DBAP 614. Business as an Evolving Complex System. 3 Units.

The goal of this course is to provide a foundation for understanding how business systems evolve, why the business systems in the major advanced countries have evolved differently over the last 100 years or so, and what the underlying driving forces are. The focus is on transformation rather than economic growth. The course examines the evolution of business systems as a result of technological and organizational change. It deals with the role of history, culture and finance in generating business organizations in various countries. The course also studies the emergence of regional innovation systems and industry clusters, as well as how digitization and globalization are changing the "industrial logic." Prereq: Must be enrolled in the Doctor of Business Administration Program.

DBAP 617. Technology and Social System Design. 3 Units.

Managers are designers who shape the social and technical world we inhabit. This course explores the process of design and asks how managers can become better designers and interventionists who anticipate and evaluate the social, economic, and political consequences of existing and emerging products, processes, and organizational forms. Prereq: Must be enrolled in the Doctor of Business Administration Program.

DBAP 638. Qualitative Inquiry I. 3 Units.

This course explores ways to conceptualize an object of study and facilitates formulation of students' conceptual work and production of research reports at the end of the first year of the program. The course conveys how to generate research ideas by critically reviewing literature and developing ideas that contribute to a problem or issue of interest by working with theory and extending previous research. The practicality of conducting certain kinds of research is evaluated and length, intensity and ethical constraints of different research efforts are examined. Each student produces a report communicating and supporting a conceptualization of the phenomenon of interest involving independent, mediating and dependent variables. The paper defines a problem of practice, presents, both visually and in narrative form, concepts shaped by field experience and prior writing that promote understanding of the problem, and includes a research proposal describing sample, data collection and data analysis. Prereq: DBAP 665.

DBAP 640. Social Ethics: Contemporary Issues. 3 Units.

The course draws upon intellectual ancestors and current thinkers in moral philosophy and ethics to assist each student in identifying, analyzing, and discussing social and ethical questions pertaining to the definition and purpose of contemporary life, the need for moral coherence, and the meaning of life in a global society. The unifying theme of the course is Tolstoy's question, "How then shall we live?" The course does not seek to provide answers to the great questions of life. Rather, it tries to expand each student's capacity to grapple with such questions. Prereq: Must be enrolled in the Doctor of Business Administration Program.

DBAP 641. Qualitative Inquiry II. 3 Units.

This course guides the student in conducting the qualitative research project that was proposed in EDMP 638. Fieldwork and initial analysis is conducted during the summer when data based on semi-structure interviews is collected and analysis begins using inductive coding techniques. A summer residency is held in mid-June to assess progress as final data collection and analysis continues. The aim of the fall semester is to prepare a formal research report on that project, which will be submitted to an academic research conference. The final report includes a revision of one's conceptual model, integrating new understandings and literature arising from the data collection and analysis. Prereq: DBAP 638.

DBAP 642. Directed Studies Seminar. 0 - 9 Units.

At different times during the Program, DM/DBA students register for Directed Studies courses. The purpose of these courses is to recognize the work the students are doing to conduct and present their individualized research at a high quality level. Activities conducted under the Directed Studies courses have deliverables dedicated to the collection of qualitative or quantitative data and the preparation of research reports. Offered as DBAP 642, EDMP 642 and MGMT 642. Prereq: Must be enrolled in the Doctor of Business Administration Program.

DBAP 645. Integration of Qualitative and Quantitative Inquiry. 3 Units.

Using the mixed method research toolkit developed in previous courses, this course focuses on critically analyzing selected pieces of published applied and policy research to develop a critical appreciation of issues and debates that have wide applicability and relevance. In particular, it offers students ways to integrate and triangulate using a mixed method approach, different forms of evidence, and related evidence. In addition, this course addresses common method choice and justification issues and related challenges of validity and theory formulation that typically arise during the students' execution of a series of individual research projects. Application of critical analysis and appreciation approach in justifying mixed methods designs to the student's own research work is encouraged and supported by sharing and discussing common research and methodology themes and problems. Prereq: Must be enrolled in the Doctor of Business Administration Program.

DBAP 648. Causal Analysis of Business Problems I. 3 Units.

Model Building & Validation I introduces fundamental concepts in theorybased model building and validation. In this course students will develop, explore, refine and validate a range of models appropriate for addressing their problem of practice including classification models, process models, variance models, and articulating nomological networks. In particular, the course will focus on effective conceptualizations of causation, control, mediation, and moderation. Further, foundational statistical techniques such as tests of assumptions of the data, exploratory factor analysis, and regression and path analysis will be introduced. Offered as DBAP 648 and EDMP 648. Prereq: Must be enrolled in the Doctor of Business Administration Program.

DBAP 649. Experimental Design and Analysis. 3 Units.

Building upon the first course in Model Building & Validation, this course will guide students through the theoretically-grounded variance models that are required for testing through structural equation modeling (SEM) in the quantitative portion of their research. Fundamental concepts in model testing will be reinforced using path analysis, and will include a deeper exploration of moderation by addressing topics such as moderated mediation and interaction effects. Beyond the analysis the course will emphasize precise and accurate formulation of theoretical models and associated reasoning, as well as careful interpretation of findings. The class will also delve into testing of data assumptions and prepare students for the model testing portion of their capstone assignments. Prereq: Must be enrolled in the Doctor of Business Administration Program.

DBAP 665. Introduction to Research Inquiry. 3 Units.

This course begins participants' three-year research experience. Energized by one's personal passion and commitment to the topic, we seek for the work to be accomplished at a level that makes it worthy of widespread dissemination and influence as engaged scholars. The goal in this course is to prepare students to develop their minds as scholars by understanding the world of research; develop a research identity by identifying one's research domain; learn to read academic literature and write in a scholarly style; work with academic literature to identify and digest concepts and theories that inform research on that problem; begin to develop a conceptual model that abstracts how the world may be functioning in that problem domain and points to a research question that can guide the next stage of the research. The final deliverable for this course is to present the research topic with substantiation for its significance, relevance and timeliness in the management field. This would include the research question(s); the literature review; and proposed qualitative methodology and analytical approach(es). Prereq: Must be enrolled in the Doctor of Business Administration Program.

DBAP 672. Flourishing Enterprise: Creating Sustainable Value for Business and World Benefit. 3 Units.

This course is designed to galvanize new visions of business and society, as well as organizational leadership. The course is born of a conviction that the future of human society and the natural world is intimately linked to the future of the world economy, business enterprises, and management education. The course presentations, books, dialogues, and interview projects are organized around three themes: (1) the state of the world and the economics possibilities of our time, (2) the business case for understanding business as an agent of world benefit--how business performance can profit from current and future advances in sustainable design and social entrepreneurship; and (3) tools for becoming a change leader--including the methods of Appreciative Inquiry and new insights about "strength-based" change emerging from the science of human strengths. The overarching aim is to provide a powerful introduction to the many facets of sustainable value creation as a complete managerial approach. Prereg: Must be enrolled in the Doctor of Business Administration Program.

DBAP 677. Designing Sustainable Systems. 3 Units.

Students in teams will recognize and work in practice on a managerial problem that involves dimensions of sustainability and design. They will develop a set of solutions to the problem by generating alternative models and intervention strategies to address the problem. The project results in a short presentation and written communication of the solution in a form of a poster or prototype. The course will also include presentations of intervention and action research approaches and issues of inquiry validation and theory development. Prereq: Must be enrolled in the Doctor of Business Administration Program.

DBAP 680. Conflict & Cooperation in the Global Arena. 3 Units.

The global arena is described by some as a realm of perpetual conflict. Others argue that given the right institutions and incentives, international actors can find ways to achieve cooperation, peace and increased global prosperity. Still others suggest that the international political and economic arena is "what you make of it"-emphasizing the role of norms, identities and ideas in shaping international outcomes. This course will examine both theoretical and policy perspectives regarding the question of international conflict and cooperation, with a specific emphasis on drawing on insights from collective action theory and international relations scholarship. Offered as DBAP 680 and EDMP 680. Prereq: Must be enrolled in the Doctor of Business Administration Program.

DBAP 681. Research Designs and Analytics for Archival and Online Data. 3 Units.

This course introduces basic concepts and statistical techniques of research designs and analytics for archival and online data. It also introduces the foundations of causal inference, as well as validity and reliability in quantitative research. These tools prepare students for testing models of a management phenomenon that rely on compiling data from different available sources and analyzing the compiled data for insights and hypotheses testing. Three specific statistical approaches emphasized in the course include understanding how to (a) compile meaningful archival/online data to pursue a research question, (b) clean, process and integrate different data sources, and (c) analyze the compiled using data mining and hypotheses testing tools. The focus will be on opening the choices of research designs that are flexible to accommodate the varied research questions of interest to students. Robustness checks for archival and other forms of data will also be explained and utilized. Prereg: Must be enrolled in the Doctor of Business Administration Program.

DBAP 682. Foundational Statistical Analysis and Measurement. 3 Units. There are two major goals for second year quantitative study: (a) to build competence in research design and methodology for collecting and analyzing quantitative data, and (b) to develop a foundation for formulating questions for quantitative inquiry and critically interpreting products of such inquiry. This course specifically will focus on the three main stages in structural equation modeling: 1. Data preparation 2. Measurement validation 3. Structural modeling The details of each of these stages will be reviewed in this course. To summarize, the course will focus on the global and local criteria that must be considered when conducting valid quantitative analysis with structural equation modeling We will also devote some time and energy to practicing relevant theorizing through abductive reasoning of proposed structural models. Prereq: Must be enrolled in the Doctor of Business Administration Program.

DBAP 683. Integration of Methods Sequences. 3 Units.

This course provides the final guidance for integrating all program research method sequences and ensures that the quantitative paper deliverable not only has been completed, but also fully integrated with the DBA Dissertation. Students are provided with hands on writing, data analysis, data organization through seminars and skill building workshops. Prereq: Must be enrolled in the Doctor of Business Administration Program.

DBAP 699. Applied Research Project Continuation. 1 - 9 Units.

This course is set up individually upon conference between the student and a DM Faculty member and is designed in consult with the DM Program Director in order to complete the student's required coursework and research requirements within the DM Program. Offered as DBAP 699 and EDMP 699. Prereq: DBAP 665.

Economics (ECON)

ECON 102. Principles of Microeconomics. 3 Units.

This course is an introduction to microeconomic theory, providing a foundation for future study in economics. In particular, it addresses how individuals and businesses make choices concerning the use of scarce resources, how prices and incomes are determined in competitive markets, and how market power affects the prices and quantities of goods available to society. We will also examine the impact of government intervention in the economy.

ECON 103. Principles of Macroeconomics. 3 Units.

While Microeconomics looks at individual consumers and firms, Macroeconomics looks at the economy as a whole. The focus of this class will be on the business cycle. Unemployment, inflation and national production all change with the business cycle. We will look at how these are measured, their past behavior and at theoretical models that attempt to explain this behavior. We will also look at the role of the Federal Government and the Federal Reserve Bank of the United States in managing the business cycle.

ECON 200. Economics Research and Communication Methods. 1 Unit.

What is entailed in conducting economics research? This one credit hour course offers an introduction to research and communication in economics. We begin with the research process: how one explores research topics and determines a viable research question. Next we investigate data: structures, variable types, measurement, sources, and issues to be aware of when working with data, generally. Third, we discuss an overview of the basic ways one might present and analyze data. Fourth, we examine how to find and read research papers, along with effective prompt engineering to guide generative AI, along with how to prepare a literature review. Finally, we discuss tools for effectively communicating economics both orally and in writing. This course offers a background to working with data for students who will take empiricalbased courses, especially in economics. This course also will be of interest to students considering internships and jobs in data analytics and economics research.

ECON 216. Data Visualization in R. 3 Units.

Visualizations, such as graphs and maps, provide a compelling and intuitively appealing approach to understanding data and communicating that understanding to others. This course provides a practical, hands-on introduction to the creation of beautiful visual displays of social science data. We will learn the powerful but easy to use visualization tools in the R language. No prior experience in working with data or in coding is required. Counts as a CAS Quantitative Reasoning course. Counts as a Quantitative Reasoning course. Prereq: Sophomore student standing.

ECON 307. Intermediate Macro Theory. 3 Units.

Macroeconomics studies aggregate indicators of the performance of an economy, most commonly measured in terms of GDP, and the rates of unemployment and inflation. An important goal of macroeconomic researchers is to develop a model of an economy that is simple, yet powerful enough to explain the historical trends of these aggregate economic indicators. Needless to say, coming up with a good model has remained a very difficult task. So far, there is no single model that is good enough to coherently explain even the most prominent historical trends of aggregate economic indicators. But several models have been built, each offering insight into a certain aspect of the economy. Throughout the course model building is motivated by real world cases from the American economy. Prereq: ECON 102 and ECON 103.

ECON 308. Intermediate Micro Theory. 3 Units.

This course builds on ECON 102 and provides a more in-depth analysis of the theory of the consumer, the theory of the firm, market equilibrium, market failure and government intervention in the market. The focus in this class is on intuition, rather than mathematical derivations, although there will be some. You should come away from this course with a greater understanding of how consumers and firms make their decisions and how they interact in the market place. Note: a student cannot receive degree credit for both ECON 308 and ECON 309. Prereq: ECON 102 and (MATH 121 or MATH 125).

ECON 309. Intermediate Micro Theory: Calculus-Based. 3 Units.

This course builds on Economics 102 and provides a more in-depth analysis of the theory of the consumer, the theory of the firm, market equilibrium, market failure and government intervention in the market. We will use calculus to derive supply, demand and market equilibrium from first principles. You should come away from this course with a greater understanding of how consumers and firms make their decisions and how they interact in the market place. Note: a student cannot receive degree credit for both ECON 308 and ECON 309. Prereq: ECON 102 and (MATH 122 or MATH 126).

ECON 312. Entrepreneurial Finance. 3 Units.

This course explores the financing and financial management of entrepreneurial new ventures. The course will focus on issues of financial management of new ventures (forecasting cash flows, cash flow management, valuation, capital structure) and the various financial methods and mechanisms available to entrepreneurs (bootstrapping, angel investors, venture capitalists, IPOs). Offered as ENTP 310 and ECON 312.

ECON 313. Experiential Entrepreneurship. 3 Units.

Experiential entrepreneurship places students in a startup (founded by the student or someone else) for a semester, while simultaneously teaching students key concepts for startup success in a classroom setting. Each session covers tools and concepts that every entrepreneur should understand, and students should be able to apply these tools and concepts to their host companies. Prereq: ECON 102.

ECON 326. Econometrics. 4 Units.

Hotel rooms at a ski resort are expensive in the winter when the hotel is full, and they are cheap in the summer when it is empty. Despite this, you shouldn't conclude that you can sell more hotel rooms by raising the price! Econometrics is the branch of economics that uses statistical tools to investigate data and estimate the correct causal effects, even in complicated observational data like the above example. In this course we study the theory behind regression analysis, develop techniques for building flexible models, and learn cutting-edge strategies for isolating causal impacts. This hands-on class will focus on the intuition and application of these models, rather than pure theory. It will provide students with tools they can use professionally and in their own research. Topics covered include multivariate regression, probit models, fixed effects, difference-in-differences, synthetic controls, GMM, instrumental variables, regression discontinuity, and more. Though students will leave with the ability to program statistical models, no programming experience is assumed. Prereq: ECON 102 and ECON 103 and (OPRE 207 or STAT 243 or STAT 312 or STAT 312R or STAT 201 or ANTH 319 or SOCI 307).

ECON 327. Advanced Econometrics. 3 Units.

This class builds on the foundations of applied regression analysis developed in ECON 326. The goal of the class is to equip students with the tools to conduct a causal analysis of a hypothesis in a variety of settings. Topics will include causality, panel and time series data, instrumental variables and quasi-experiments, semi- and non-parametric methods, and treatment evaluation. Offered as ECON 327 and ECON 427. Prereq: ECON 326.

ECON 329. Game Theory: The Economics of Thinking Strategically. 3 Units.

The term "game theory" refers to the set of tools economists use to think about strategic interactions among small groups of individuals and firms. The primary purpose of this course is to introduce students to the basic concepts of game theory and its applications. The class will stress the use of game theory as a tool for building models of important economic phenomena. The class will also include a number of experiments designed to illustrate the game theoretic results, and to highlight how reality may depart from the theory. The course will stress the value of thinking strategically and provide students with a framework for thinking strategically in their everyday lives. Rather than approaching each strategic situation they encounter as a unique problem, students will be taught to recognize patterns in the situations they face and to generalize from specific experiences. A paper on an application of game theory will be required for graduate students. Recommended preparation: MATH 121 or MATH 125. Offered as ECON 329 and ECON 429. Prereq: ECON 102.

ECON 330. Economic Behavior and Psychology. 3 Units.

This course is an introduction to Behavioral Economics, a growing field which incorporates insights from other disciplines–primarily psychologyinto microeconomic models. We will cover fundamental aspects of decision-making, such as how people respond to risk, how people make trade-offs between short-term and long-term rewards, and the ways in which people aren't as selfish as standard economic models suggest. We will cover novel economic models that can accommodate phenomena such as altruism, loss aversion, and self-control problems. We will discuss empirical applications of these concepts in areas ranging from personal finance and health to marketing and public policy. Prereq: ECON 102.

ECON 332. Labor Economics: Theory, Data, and Policy. 3 Units.

This course uses economic analysis to understand labor markets. The course will cover the labor demand decisions by profit- maximizing firms and the labor supply decisions by rational workers. Using these tools students will examine labor market structures and government policies which together determine wages, earnings, employment, and hours worked. Students will also examine the relationship between the labor market and investments in physical and human capital. We will also examine how labor market theory and data are applied in research and for policy decisions. Students will demonstrate their knowledge of labor market data to analyze current issues. Students will make extensive use of spreadsheets and other data analysis tools to organize and analyze data and to make graphical presentations. Prereq: ECON 102.

ECON 333. The Economics of Organizations and Employment Relationships. 3 Units.

Economic activity is guided not only by the "invisible hand" of the market, but also by the "visible hand" of management. This class uses microeconomic concepts to understand different ways of organizing economic activity, including firms, cooperatives, and state-owned enterprises. The course focuses on the roles of information, property rights, and incentives in determining the origin and performance of different types of organizations. We look at problems faced by real organizations, examining questions such as, are Facebook and Uber fundamentally new types of firms? Why do some firms offer high-paying jobs while competitors in the same industry do not (eg, Costco vs. Walmart)? What are the impacts of different kinds of contracts with workers and supply chain firms on incentives to work hard, invest, and innovate? Should firms maximize shareholder value, or something else? Why are firms often not able to survive "disruptive innovation"? Are venture capitalists promoters or thwarters of innovation? An objective of the course is to give students a rigorous understanding of fundamental principles that will allow them to examine their own careers, even as many features of the economy change dramatically. Prereq: ECON 102.

ECON 338. Law and Economics. 3 Units.

This course evaluates major areas of common (case) law using basic economic concepts and game theory. Applying economic principles to legal issues offers insight into how laws and regulation create or change (either intentionally or unintentionally) the incentives of decision-makers that affect welfare-maximizing behavior. We begin with an overview of the U.S. legal system and economic tools, then evaluate each major area of law: property (real and intellectual), contracts, torts, and basic regulation. We also explore how economists use their tools as expert witnesses in court cases, a possible career path as an economics major. Using concepts from class, you will present and write positive economic analyses of legal cases from the perspectives of the plaintiff's economist, defendant's economist, and judge. Prereq: ECON 102.

ECON 341. Money and Banking. 3 Units.

This course emphasizes the importance of financial markets, the nature and role of the financial system, and the linkages between these-money and banking--and the economy. Emphasis is placed on both theoretical and practical constructs, on major innovations and contemporary changes, and the closely intertwined condition of financial and economic systems with monetary and fiscal policy. Offered as BAFI 341 and ECON 341. Prereq: ECON 102 and ECON 103 and Sophomore standing or above.

ECON 342. Public Finance. 3 Units.

Government intervention is a pervasive feature of every modern economy. The goal of this course is to develop the economic tools for understanding and evaluating a wide range of government behaviors such as taxation and redistribution policy, the public provision of goods and services, and the regulation of private markets. ECON 342 begins by considering "market failures" that justify government intervention in a market economy. To respond to such failures, governments must raise revenues through taxation. Using the tools of microeconomic theory, we will develop a framework for thinking about the positive and normative effects of alternative forms of taxation. Particular attention will be paid to the individual income tax in the U.S., allowing students to understand the efficiency, distributional and behavioral implications of recent changes in the tax code. We will then turn to the expenditure side of the public sector. The economic principles used to evaluate public expenditures will be discussed and exemplified through the analysis of significant public programs. Of particular interest will be the effect of public programs on the incentives faced by workers and families. Prereq: ECON 102.

ECON 346. Economic Perspectives. 3 Units.

This course is designed to help students to "think like an economist." It puts economics in the context of other social sciences by applying economic analysis to general questions of social organization. The course emphasizes the ongoing evolution of social systems. A variety of topics will be considered in class. There will also be opportunities for students to apply economic analysis to topics of individual interest. Offered as ECON 346 and ECON 446.

ECON 348. Economic Thought. 3 Units.

This course is a survey of some of the foundational texts underlying modern economic thought. You should come away from this course with a deep understanding of economic viewpoints, as well as an understanding of the evolution of the thinking underlying economics from the Mercantilist era onward. Counts as a Communication Intensive course. Prereq: Academic Inquiry Seminar (AIQS) or SAGES First Seminar.

ECON 350. Regional and Urban Economics: The Case of Israel. 3 Units.

The goal of this course is to develop a deep understanding of core issue in regional and urban economics. Israel, by dint of its unique history and geo-political environment, provides a fascinating case study on the impact of refugees and immigration, urban planning and governance, security concerns, inequities and discrimination, labor force participation, poverty, environmentalism, and regional cooperation. This course provides a learning experience about these topics both via classroom time at Israeli universities and through visits to carefully chosen sites throughout the country. The trip includes a small amount of discretionary time for visiting spiritually significant sites as well. Counts as a CAS Global & Cultural Diversity course. Prereq: ECON 102 or ECON 103.

ECON 355. The Origins of the Modern Economy. 3 Units.

This course in economic history investigates the process by which the modern industrial economy, with its high and growing standard of living, came into being. It traces the development of important pre-modern economic institutions, such as agriculture, states, markets, and long-distance trade. The industrial revolution, the fulcrum that launched the modern economy, is then explored in detail, including its origins and uneven spread around the world. Prereq: ECON 102.

ECON 360. Economics of Crime. 3 Units.

Crime and incarceration impose tremendous costs on society with lasting impact on individuals, families, and communities. Over the past four decades, the incarceration rate in the United States has grown to an historically unprecedented level with approximately 2.2 million people behind bars. In light of the substantial resources allocated towards crime, it is only natural to ask whether the criminal justice system achieves its goals. The purpose of this course is to develop the analytical skills necessary for understanding the economic rational for criminal law and the criminal justice system. Through the lens of microeconomic theory, we will deal with questions such as when and what to criminalize, the severity of punishment, the determinants of the supply of criminal activity, the effects of policing, and the optimal level of enforcement. This course will introduce students to key concepts in crime policy and help develop their policy analysis skills, including the ability to frame problems and policy alternatives, think critically about empirical evidence, use costeffectiveness and cost-benefit analysis to compare policy alternatives, and communicate the findings in writing. Prereq: ECON 102.

ECON 362. Applied Business Economics. 3 Units.

The goal of this course is to learn a set of statistical tools and research designs that are used by business economists, those who evaluate topics important for making business decisions and understanding the macroeconomy, working for a firm or government agency. The focus is on topics not covered in other economics courses pertaining to Economic Measurement and Applied Business/Financial Econometrics. This course emphasizes the work of a practitioner, thereby building on theoretical models learned in microeconomics, macroeconomics, and econometrics. Topics covered in this course will be of particular interest to students considering working as an economist in the private sector. They also help prepare students for the National Association for Business Economics (NABE) Certification in Applied Business Economics and Data Analytics (CBE) exam. Prereq: ECON 102 and ECON 103 and (ECON 326 or BAFI 361).

ECON 364. Economic Analysis of Business Strategies. 3 Units.

This course examines how companies compete against each other and interact with customers in an effort to increase profits. Topics include: pricing strategies, product differentiation, advertising, R&D strategies, bundling and tie-ins, entry barriers, mergers and acquisitions, collusion and cartels, the dynamics of network industries (e.g. information technology), and technology adoption and diffusion. The course will take two complementary perspectives. First, we will consider the point of view of companies, and ask how different business strategies can affect competitive success. Second, we will consider the perspective of consumers and policymakers: we will ask whether different firm strategies enhance or reduce social welfare, and will explore different policy options to increase welfare (e.g. antitrust policies, patent systems). The first part of the course will utilize a range of basic economic tools. In the second part of the course, we will apply what was learned in the first part to real examples of firms and industries, including both business and legal cases. Offered as ECON 364 and ECON 464. Prereg: ECON 102.

ECON 366. Economics of Sports. 3 Units.

The world of sports provides many captivating examples of how economic tools and methods can be understood through real-world applications. While the popularity of sports is unquestioned, there are many ways in which economics can delve more deeply into the hidden inner-workings of the sports world. When sports teams acquire a new player, are they attempting to maximize wins, or profits? Do the NCAA, NFL, or other sports leagues have a monopoly, and what costs would this entail? What incentives guide sports teams, strategies, and would they ever lose on purpose? Is it worth it to subsidize a sports team to build a new stadium, or renovate an existing arena, in your city? The purpose of this course is to perform economic analysis of sports teams, leagues, and institutions by applying economic tools to a variety of sport-related topics. Microeconomic theory is applied to these questions, and others, drawing from economic fields including industrial organization and public finance. Students with an interest in applying basic economic tools to answer real-world questions in the rapidly growing world of sports should strongly consider taking this course. Prereq: ECON 102.

ECON 367. Industrial Strategy: Government Action to Transform the Economy. 3 Units.

Industrial policies are policies that explicitly target the transformation of the structure of economic activity to improve public welfare, such as by increasing prosperity, promoting innovation, or fighting climate change. This course will provide students with a rigorous understanding of modern and historical industrial policies. Students will discuss classic and current literature on the subject, and under what conditions (if any) different kinds of industrial policies make sense. They will gain an understanding of the tools that policymakers have adopted, factors that shape their effectiveness, and their impacts on national and global trajectories of innovation, equality, and power. Students will be tasked with writing a research paper and evaluated through midterm and final assessments, as well as performing group work and various other assignments. Counts as a Communication Intensive course. Prereq: ECON 102.

ECON 368. Environmental Economics. 3 Units.

Economics provides a critically important lens for understanding why environmental problems arise and persist, and the consequences of efforts to mitigate those problems. We will apply economics tools to realworld problems, such as: how can we address climate change without massive job loss? why do markets fail to prevent pollution, and how can government policy do better? Under what circumstances can companies profit by polluting less? What kinds of policies can spur the invention of green technologies? Class sessions will include guest presentations from professionals who are actively working on environmental challenges. Offered as ECON 368 and ECON 468. Prereq: ECON 102.

ECON 369. Economics of Technological Innovation and Entrepreneurship. 3 Units.

This course is designed to help students identify, evaluate, and obtain control over technological opportunities so they may successfully understand the challenges of starting new companies. The course focuses on four themes: 1) the source, discovery and evaluation of technological opportunities; 2) the process of organizing a new firm to produce new technology that satisfies the needs of customers; 3) the acquisition of financial and human resources necessary to exploit technological opportunities; and 4) the development of mechanism to appreciate the returns from exploitation of technological opportunities. Prereq: ECON 102.

ECON 373. International Trade. 3 Units.

This course deals with international trade theories and policies, covering: gains from and patterns of trade; immigration; foreign direct investment; protectionism; multilateral trade liberalization; regionalism; and the costs and benefits of globalization within, as well as among, nations. Prereq: ECON 102.

ECON 375. Economics of Developing Countries. 3 Units.

This course focuses on international aspects of economic development. The term "developing country" is often defined as a country that exhibits low per capita income, high poverty level, low level of industrialization, or low life expectancy. In terms of size, the developing countries make up at least three-fourth of the world population. Why do we study those countries' economics separately from the industrialized economies? In fact, low economic growth, high unemployment, or high poverty rates also exist in many developed countries. The differences lie not in the types of problems but in the causes of these problems. In addition, differences in the kind of institutions that prevail in developing countries also lead to different policy prescriptions. Among developing countries, differences in historical experience, cultural practices, political institutions and economic conditions are also enormous. Illustrations and explanations of those differences are provided from a wide range of developing countries. Prereq: ECON 102 and ECON 103.

ECON 376. Inside Financial Crises. 3 Units.

Financial crises throughout history share common elements, though each one contains aspects unique to its own era. Why do financial systems tend to develop imbalances that lead to bankruptcies and systemic collapse? What are the linkages that cause spillovers from financial systems to the broader economy? What tools are available to detect and counter financial pressures before they erupt into economic catastrophe? This course will examine these issues, by examining several recent financial collapses, including the 2007-2009 global financial crisis. We consider post-crisis legislative and regulatory responses, and ask whether they are likely to dramatically reduce the odds of another crisis. Prereq: ECON 102 and ECON 103.

ECON 377. The Central Bank Playbook: Navigating Inflation, Stability & Growth. 3 Units.

Around the world, central banks have been given primary responsibility for keeping inflation low and stable, and for stabilizing the business cycle. In addition, many countries have given their central banks responsibilities for stabilizing their financial systems as well. Central banks have existed for hundreds of years, but their responsibilities, goals and operations have changed considerably through time. Recent crises raised questions about the appropriate role of central banks. This course will provide students with an understanding of the changes taking place today in the theory and practice of central banking, with a primary emphasis on monetary policy. The course will explore developments taking place in the United States but will extend that analysis to other places including Japan, the United Kingdom, and Europe. The assignments in this class focus on student presentations and written works that simulate communications in a central bank. Professional presentation and writing skills will be developed over the semester. The writing assignments will use formats applied in central banks, notably policy memos. The presentations will include data from primary sources, student-analysis of the data, and careful visualization to support a specific policy argument. All students will engage in in-class presentations, although assignments may be organized as group assignments. Counts as a Communication Intensive course. Prereq: ECON 102 and ECON 103.

ECON 378. Health Care Economics. 3 Units.

Healthcare accounts for over one-sixth of the U.S. national economy and over one-eighth of its workforce, shares that have dramatically increased over the last 50 years. The rapid growth in healthcare spending has accompanied growing concerns about the quality and efficiency of U.S. healthcare delivery and persistent disparities in access to care. Are these concerns justified? If so, what can policymakers do - and what are they doing - to address them? The purpose of this course is to develop the analytical skills necessary for understanding how the U.S. health care sector operates, how it has evolved, the forces at work behind perceived deficiencies (in access, quality and cost control), and the expected impact of alternative policy proposals. These issues are addressed through the lens of microeconomic theory. Under this framework, outcomes result from the interaction of decisions made by participants in the healthcare economy (e.g. patients, providers, insurers, government), with those decisions governed by the preferences, incentives and resource constraints facing each decision-maker. This course should be of particular interest to students who envision future careers in healthcare delivery, healthcare management, pharmaceutical and device innovation, health insurance or public health, as well as other policy-oriented students seeking to understand the contentious issues in healthcare policymaking. Prereq: ECON 102.

ECON 380. Computational Economics. 3 Units.

Over the past two decades, computational methods have become an indispensable tool in social science studies. The goal of this course is to introduce undergraduate students to numerical methods and computer implementations for conducting modern quantitative research in economics and social sciences. In this course, we will learn about how to utilize computational methods to conduct research in several different domains, including microeconomics, macroeconomics, financial market, and empirical methods. At the conclusion of this course, students will be able to effectively apply quantitative solution methods to a wide range of economic, financial, and business issues. In addition, students will learn Python as a basic programming language. The learned programming skills will be readily applicable out of classroom. Computational economics will provide students a comprehensive experience and training in economics, computer science, and statistics. Students will be able to distinguish themselves on the job-market, as candidates ready to work in an environment that requires both economics insights and strong quantitative data/computational skills. The course will also be highly useful for students who plan to go to graduate school in either economics, business, finance or statistics. Recommended preparation but not required: basic programming experience (e.g. using Python, R, Matlab, Stata). Prereq: (ECON 102 or ECON 103) and (OPRE 207, ANTH 319, SOCI 307, STAT 201, STAT 243, STAT 312, or STAT 312R).

ECON 386. Urban Economics. 3 Units.

Microeconomic theory as taught in principles (and even intermediate) does not usually take into account the fact that goods, people, and information must travel in order to interact. Rather, markets are implicitly modeled as if everyone and everything is at a single point in space. In the first part of the course, we will examine the implications of spatial location for economic analysis. In the second part of the class, we will use microeconomic tools to understand urban problems. Topics that we will cover include urban growth, suburbanization, land use, poverty, housing, local government, transportation, education, and crime. Prereq: ECON 102.

ECON 391. Advanced Topics and Writing in Economics. 3 Units.

This course explores cutting-edge economics research on a small number of topics over the course of the semester. Students will engage in and improve their abilities at 1) careful reading of original research articles and book chapters, 2) broad and integrative discussion of research with scholarly peers, and 3) synthetic writing about research for a policymaking audience. Students will be challenged throughout the course to think, debate, and write about the social world by critically and careful employing economic facts and theories. Counts as a Disciplinary Communication course. Counts as a SAGES Departmental Seminar course. Prereq: (ECON 308 or ECON 309) and (ECON 326 or BAFI 361).

ECON 395. Capstone Research in Economics. 3 Units.

This course satisfies the capstone experience for economics majors, offering an opportunity to apply knowledge from previous coursework in economics, particularly econometrics, to conduct economic research in the role of an on-the-job economist. The primary objective is to produce and communicate original research and solutions to real-world problems using empirical and theoretical tools of economics. For your project of original research, you will identify an applied research problem, determine an appropriate model and methodology, review relevant literature, gather data, provide an empirical economic analysis, and interpret the results. Projects will be presented in writing, orally, and with posters. Goals of the course include creating an empirical writing sample, honing coding/ programming and data analysis skills, practicing teamwork, and critiquing ideas. Counts as a Capstone Project course. Counts as a SAGES Senior Capstone course. Prereq: ECON 326.

ECON 397. Honors Research I. 3 Units.

All students admitted to the Honors Program will undertake an independent research project (Senior Thesis) under the guidance of a faculty member (Thesis Advisor). ECON 397 is used to define the topic, review relevant literature, formulate hypotheses, and collect appropriate data toward completing their research project. Students will have the responsibility of providing regular progress reports to their thesis advisor highlighting the work accomplished to date, the immediate challenges confronting them, and a plan to complete the project in the time remaining. Prereq: ECON 102, ECON 103, ECON 326 and ECON 308 or ECON 309; Junior standing and minimum GPA of 3.3 in ECON major and 3.0 overall.

ECON 398. Honors Research II. 3 Units.

This is the second course in a two course sequence to complete the Honors Research Program in Economics. Counts as a SAGES Senior Capstone course. Prereq: A grade of B or higher in ECON 397.

ECON 399. Individual Readings and Research. 1 - 6 Units.

Intensive examination of a topic selected by the student. A student must receive permission from the program administrator before the start of the term, and permission will only be granted in cases where the student has a clear learning plan and objectives in using the independent readings/ research option that cannot be met through available course offerings.

ECON 427. Advanced Econometrics. 3 Units.

This class builds on the foundations of applied regression analysis developed in ECON 326. The goal of the class is to equip students with the tools to conduct a causal analysis of a hypothesis in a variety of settings. Topics will include causality, panel and time series data, instrumental variables and quasi-experiments, semi- and non-parametric methods, and treatment evaluation. Offered as ECON 327 and ECON 427.

ECON 429. Game Theory: The Economics of Thinking Strategically. 3 Units.

The term "game theory" refers to the set of tools economists use to think about strategic interactions among small groups of individuals and firms. The primary purpose of this course is to introduce students to the basic concepts of game theory and its applications. The class will stress the use of game theory as a tool for building models of important economic phenomena. The class will also include a number of experiments designed to illustrate the game theoretic results, and to highlight how reality may depart from the theory. The course will stress the value of thinking strategically and provide students with a framework for thinking strategically in their everyday lives. Rather than approaching each strategic situation they encounter as a unique problem, students will be taught to recognize patterns in the situations they face and to generalize from specific experiences. A paper on an application of game theory will be required for graduate students. Recommended preparation: MATH 121 or MATH 125. Offered as ECON 329 and ECON 429. Prereq: MBAC 512 or MBAP 406.

ECON 431. Economics of Negotiation and Conflict Resolution. 3 Units.

Students frequently enroll in a negotiation class with one thought in mind--negotiating a better job offer from an employer. They soon learn, however, that negotiation skills can do far more than improve a paycheck. Negotiations occur everywhere: in marriages, in divorces, in small work teams, in large organizations, in getting a job, in losing a job, in deal making, in decision making, in board rooms, and in court rooms. The remarkable thing about negotiations is that, wherever they occur, they are governed by similar principles. The current wave of corporate restructuring makes the study of negotiations especially important for M.B.A.s. Mergers, acquisitions, downsizing and joint ventures call into question well established business and employment relationships. Navigating these choppy waters by building new relationships requires the negotiation skills that you will learn in this class. Offered as ECON 431 and ORBH 413.

ECON 446. Economic Perspectives. 3 Units.

This course is designed to help students to "think like an economist." It puts economics in the context of other social sciences by applying economic analysis to general questions of social organization. The course emphasizes the ongoing evolution of social systems. A variety of topics will be considered in class. There will also be opportunities for students to apply economic analysis to topics of individual interest. Offered as ECON 346 and ECON 446.

ECON 464. Economic Analysis of Business Strategies. 3 Units.

This course examines how companies compete against each other and interact with customers in an effort to increase profits. Topics include: pricing strategies, product differentiation, advertising, R&D strategies, bundling and tie-ins, entry barriers, mergers and acquisitions, collusion and cartels, the dynamics of network industries (e.g. information technology), and technology adoption and diffusion. The course will take two complementary perspectives. First, we will consider the point of view of companies, and ask how different business strategies can affect competitive success. Second, we will consider the perspective of consumers and policymakers: we will ask whether different firm strategies enhance or reduce social welfare, and will explore different policy options to increase welfare (e.g. antitrust policies, patent systems). The first part of the course will utilize a range of basic economic tools. In the second part of the course, we will apply what was learned in the first part to real examples of firms and industries, including both business and legal cases. Offered as ECON 364 and ECON 464. Prereq: ECON 102 or MBAC 512 or MBAP 406.

ECON 468. Environmental Economics. 3 Units.

Economics provides a critically important lens for understanding why environmental problems arise and persist, and the consequences of efforts to mitigate those problems. We will apply economics tools to realworld problems, such as: how can we address climate change without massive job loss? why do markets fail to prevent pollution, and how can government policy do better? Under what circumstances can companies profit by polluting less? What kinds of policies can spur the invention of green technologies? Class sessions will include guest presentations from professionals who are actively working on environmental challenges. Offered as ECON 368 and ECON 468. Prereq: MBAC 512 or MBAP 406.

ECON 501. Special Problems and Topics. 1 - 18 Units.

This course is offered, with permission, to students undertaking reading in a field of special interest.

Executive Doctor of Management (EDMP)

EDMP 642. Directed Studies Seminar. 0 - 9 Units.

At different times during the Program, DM/DBA students register for Directed Studies courses. The purpose of these courses is to recognize the work the students are doing to conduct and present their individualized research at a high quality level. Activities conducted under the Directed Studies courses have deliverables dedicated to the collection of qualitative or quantitative data and the preparation of research reports. Offered as DBAP 642, EDMP 642 and MGMT 642. Prereq: Must be enrolled in DM program or PhD in Management: Designing Sustainable Systems track.

EDMP 648. Causal Analysis of Business Problems I. 3 Units.

Model Building & Validation I introduces fundamental concepts in theorybased model building and validation. In this course students will develop, explore, refine and validate a range of models appropriate for addressing their problem of practice including classification models, process models, variance models, and articulating nomological networks. In particular, the course will focus on effective conceptualizations of causation, control, mediation, and moderation. Further, foundational statistical techniques such as tests of assumptions of the data, exploratory factor analysis, and regression and path analysis will be introduced. Offered as DBAP 648 and EDMP 648. Prereq: Must be enrolled in the DM Program.

EDMP 680. Conflict & Cooperation in the Global Arena. 3 Units.

The global arena is described by some as a realm of perpetual conflict. Others argue that given the right institutions and incentives, international actors can find ways to achieve cooperation, peace and increased global prosperity. Still others suggest that the international political and economic arena is "what you make of it"-emphasizing the role of norms, identities and ideas in shaping international outcomes. This course will examine both theoretical and policy perspectives regarding the question of international conflict and cooperation, with a specific emphasis on drawing on insights from collective action theory and international relations scholarship. Offered as DBAP 680 and EDMP 680. Prereq: Must be enrolled in the DM Program.

EDMP 699. Applied Research Project Continuation. 1 - 9 Units.

This course is set up individually upon conference between the student and a DM Faculty member and is designed in consult with the DM Program Director in order to complete the student's required coursework and research requirements within the DM Program. Offered as DBAP 699 and EDMP 699. Prereg: EDMP 665.

Executive MBA (EMBA)

EMBA 417. TEAMS. 0 Unit.

This course enables the formation of E.M.B.A. study groups and classroom learning environment by introducing participants to their adult learning styles, models of group decision-making, theories of team development and rules of engagement for effective learning teams. Prereq: E.M.B.A. students only.

EMBA 420. Business Ethics for Executives. 1.25 Unit.

The ability to take the value propositions of various stakeholders and integrate them into a coherent strategy/vision helps executives and their organizations respond to a wide range of ethical challenges. Doing so requires the capacity to take a stand and to offer a coherent justification for one's decisions. The course will help executives develop the ability to consider a wide range of value perspectives and to integrate them when navigating through ethical issues. Prereq: Enrolled in the Executive MBA program.

EMBA 430. Health Informatics, Analytics & Decision Making. 2.5 Units.

Increasingly in today's healthcare environment, those aspiring to succeed in leadership positions are expected to know and do more than their primary discipline traditionally required. They are also expected to transform their organizations - whether they are departments or IDS's - to a higher state of quality, effectiveness, efficiency and competitiveness. To meet this expectation they must be able to harness the interrelated power of information, analytics and decision support to plan, evaluate, improve, and control their organization. This course is for executives in health care delivery, health planning, regulatory, or accrediting organizations who will be involved with, be responsible for, or oversee: The use and/or management of health or organizational information, and analytic and decision processes; The improvement / innovation of their organization's operations and decision processes; and/or The design, acquisition, implementation, and/or evaluation of health information technologies (HIT). The course is intended to develop competence and confidence in the participant's ability to understand and manage the complex information, analytics and decision environment. Prereq: E.M.B.A. candidates only.

EMBA 436. Accounting for Business Executives. 2.5 Units.

This course is an introduction to financial and managerial accounting, rather than a course in introductory accounting. This course is designed for the business professional and is intended to prepare the student to use the information prepared by accountants. It will not dwell in detail on the technical aspects of accounting or bookkeeping. In addition, this course is designed to help the student become an effective user of cost information, from the perspective of parties internal to the firm. This aspect of accounting is a compilation of techniques rather than a set of rules. Since the information is for private use, the goal is to create the most meaningful and useful data for use by managers. Assignments will be designed to develop the student's ability to analyze and interpret accounting data and to more effectively utilize accounting data in day to day business decisions. Finally, this course is intended to strengthen abilities to identify problems and opportunities, to search out and analyze desired information leading to a well-reasoned conclusion, and to perform sensitivity analysis around that conclusion, using financial information. Prereq: E.M.B.A. candidates only.

EMBA 437. Economic Analysis for Managers. 2.5 Units.

This course, which is limited to students in the Executive M.B.A. program, explores the basic elements of the economic system which the executive needs to know in order to understand how the firm interacts with the system and how economic factors affect decision making. Prereq: E.M.B.A. candidates only.

EMBA 438. Business Statistics and Quantitative Analysis. 2.5 Units.

In this course, students study the use of modern quantitative and business statistics to support the executive decision-making process. With the help of computer software, the models examined assist in describing and analyzing problems and suggesting possible managerial actions. The techniques discussed include tools for decision making under uncertainty including regression analysis. Prereq: E.M.B.A. candidates only.

EMBA 438B. Business Statistics and Quantitative Analysis. 1.25 Unit. In this course, students study the use of modern quantitative and business statistics to support the executive decision-making process. With the help of computer software, the models examined assist in describing and analyzing problems and suggesting possible managerial actions. The techniques discussed include tools for decision making under uncertainty including regression analysis. This course is part of a two (2) course sequence. Prereq: EMBA 438A

EMBA 439. Corporate Finance. 2.5 Units.

The central organizing principle of this course is to familiarize the class with the basics of valuation. This first course in finance introduces the tools and methods employed in valuation of projects and corporate securities. Valuation involves the determination of (i) cash flows of the firm, project or financial assets and (ii) the discount rates that are used to compute the present values of the cash flows. Asset pricing models provide the underpinnings for the development of the discount rates. The material is synthesized in capital budgeting exercises which are costbenefit analyses of capital project cash flows to evaluate whether they are value enhancing. Prereq: E.M.B.A. candidates only.

EMBA 441. Leading Change: Self. 2.5 Units.

The primary objective of Leading Change: Self is to learn a method for assessing your knowledge, abilities, values, and interests relevant to leadership and executive management so that you will be able to develop and implement a plan for enhancing your leadership and executive capability throughout your career and life. The enabling objectives are: (a) To systematically identify your current and desired capability (i.e., knowledge, abilities, values, and interests); (b) To develop an individualized learning agenda and plan for the next 3-5 years; and (c) To explore techniques to assist others in doing the same. This course will explore questions, such as: Who are effective leaders? How are they different than mangers? How do they think and act? What makes us want to follow them? How are leaders developed? How can people help others become effective leaders? What type of leader do I want to be? And, what can I do to become that type of leader? Prereq: E.M.B.A. candidates only.

EMBA 442. Innovation. 2.5 Units.

Organizations are under continuous pressure to be efficient and productive in order to generate (often short-term) profit. At the same time they must innovate to remain competitive in the long-term. Innovation involves the generation, development, and delivery of new products, processes, or businesses. Intrapreneurs are those who can successfully bring new ideas to fruition in established organizations. Innovation in the context of an established organization requires that intrapreneurs fundamentally understand the dynamics of innovation and innovation management. This course introduces fundamental concepts associated with innovation in the context of an established organization. Prereq: E.M.B.A. candidates only.

EMBA 443. Supply Chain Management. 2.5 Units.

Operations managers, ranging from supervisors to vice presidents, are concerned with the production of goods and services. More specifically, they are responsible for designing, running, controlling and improving the systems that accomplish production. This course is a broad-spectrum course with emphasis on techniques and information that are helpful to the practice of management in general and at any level. We will discuss commonly occurring application problems such as process analysis, inventory control, quality management, just-in-time concepts, etc. The field of operations management was originally concerned with manufacturing systems. But many of the same ideas apply, and the same trade-offs are present, in service organizations like health care, insurance, hotel-management, airlines and government related operations. Several manufacturing and non-manufacturing environments will be discussed explicitly, and the emphasis will be on the fundamentals of the operations function in an organization. Also we will explore the interface of operations management with other functional areas such as marketing, finance, accounting, etc. Prereq: E.M.B.A. candidates only.

EMBA 445. Expanding Boundaries. 2.5 Units.

This course will help you understand the keys to successful corporate development-competitive advantage in every business in which a firm is involved. In particular, the course will help the participants to understand the following: -Corporate development strategy through capabilities and leveragable capabilities -Before venturing into a new business, the firm has to have a clear understanding of the critical capabilities required for success in the new business. -Firms can increase the odds of success if they can leverage (parts of) existing capabilities to new businesses. -Corporate development strategies-adapting to a market -Analyze the industry environment in order to select the competitive battlefield to increase the odds of success by leveraging some of your existing capabilities - sometimes also known as core competencies. This is a relatively low risk strategy. We will develop methodologies that will allow you to identify markets (segments) where your current capabilities are leveragable. -Shaping a market usually requires developing a completely new set of capabilities - very risky. We will develop concepts to understand techniques to mitigate these risks. -Acquisitions as one of the means for corporate development -Approximately half of the class sessions will be devoted to the specific case of acquisitions as a means to expand the boundaries of a firm. We will explore both how acquisitions contribute to competitive advantage and the selection process and integration of the acquired entity. Less emphasis will be placed on strict financial valuations and negotiations. Prereq: E.M.B.A. candidates only.

EMBA 446. Managing Risk and Real Options. 1.25 Unit.

The course seeks to help corporate managers understand how financial design can be used to advance the goals and strategies of the firm. In the Finance course, you concentrated almost exclusively on the firm's capital expenditure decision. You studied in great detail the discounted cash flow model, NPV, how you get your cash flows, and how you discount according to risk. Now we move to the other side of the balance sheet to look at how the firm can finance these expenditures. The first part of this class provides the basic building blocks of financial engineering which begins with call and put options. The course focuses on using derivatives (calls and puts) to change a firm's risk profile with respect to equity, interest rate, foreign exchange, credit, and commodity risks. We look at capital structure decisions and securitization issues and discuss what it means to create optimal structures. Almost immediately we will tie this to our financial crisis and obtain an appreciation for financial designs that could be setup so as to enhance firm value, mitigate systemic risks, or accomplish specific sustainable goals in a global economy. The second part of the class is geared towards real options and its relationship to strategic planning. In competitive markets, no one expects to formulate a detailed long-term plan and follow it mindlessly. As soon as we start down the path, we begin learning about business conditions, competitors' actions, and so forth and we need to respond flexibly to what we learn. Unfortunately, the financial tool most widely relied on to estimate the value of strategy, DCF, assumes that we follow a predetermined plan, regardless of how events unfold. A better approach to valuation would incorporate both the uncertainty inherent in business and the active decision making required for strategy to succeed. Prereq: E.M.B.A. candidates only.

EMBA 449. Contemporary Issues in Management. 2.5 Units.

This course is intended to address the contemporary issues in management to be decided by faculty and student interest. With the current global economic crisis, this year the course will focus on International Finance and Economics. In subsequent years, the topics will evolve as the global business climate changes. Prereq: E.M.B.A. candidates only.

EMBA 450. Managerial Marketing. 2.5 Units.

This course is designed with three overarching objectives. The first is an emphasis on decision making in a broad range of market contexts. The second objective builds on the notion that decision making is dynamic; that is, market situations demand not just one good decision but a series of them as a situation unfolds (providing new and varied information for each subsequent decision). Integrating concepts from a number of the courses that you are taking concurrently into decision-making about markets is a final objective. Prereq: E.M.B.A. candidates only.

EMBA 451. Strategy. 2.5 Units.

In most companies the process of designing business models is an ad hoc process and in my opinion an inefficient process. In this course you will learn a systematic but iterative process to do this. We will expose you to some broad categories of business models and internalize the basic logic of how to make money in each of these categories. The first step is to recognize which of these categories is most applicable to your business. The second step is to customize these broad patterns to the specifics of the business at hand. This seems easy because everything is in English and there are no hard formulas to figure out. However, unless you discipline yourself to systematically go through a structured process (there are other equally valid processes than the ones you'll be exposed to) it is very easy to fall into the ad hoc trap. You will internalize this process by applying it over a wide range of business situations that will give you confidence in its applicability to any business opportunity. After the completion of this course you should be quickly able to draw the outline of a business model for any business opportunity that you're considering. Prereq: E.M.B.A. candidates only.

EMBA 458. Healthcare Financial Management. 2.5 Units.

This course will consider basic financial concepts, techniques, and strategies for institutions and companies in the U.S. health care delivery system. Note that this may differ from the influences one would find in a different country since the payment system and ownership structures vary widely around the world. These basics include relevant factors in the economic, medical, and financial environment that shape an intelligent financial decision. Therefore, although the course is directed towards financial management decisions in health delivery organizations, it may also be useful for those who supply the industry (equipment, drugs and services), purchase services from it (employers, third party administrators, health plans) or finance these (insurance, banking, investors). Public policy and the structure of the industry also play an important role in the course. However, the general approach is from the point of view of a decision-maker in a health care organizational setting dealing with issues with important economic or financial dimensions. Prereq: E.M.B.A. candidates only.

EMBA 459. Health Economics and Strategy. 2.5 Units.

The central goal of this course is for students to master essential economic concepts and their application to critical issues in the U.S. healthcare economy. After taking this course, students should be able to: 1. Understand basic microeconomic theory as it applies to firm and consumer behavior in healthcare and health insurance markets. 2. Understand the role of market forces (including market failures) and public policy in determining the price and allocation of medical services. 3. Understand the underlying causes of "changing market conditions" and the challenges and opportunities they create for healthcare organizations. 4. Converse fluently and accurately about the economic forces at play in the healthcare economy. Prereq: E.M.B.A. candidates only.

EMBA 464. Legal Environment. 2.5 Units.

This course provides a brief overview of the legal system that managers face, with an emphasis on contracts, corporate law, property rights and the modern regulatory apparatus of government. Contracts include full coverage of the Uniform Commercial Code. Corporate law is the capstone of the consideration of other forms of business organizations such as partnerships. Regulatory areas include employment law and environmental law. Property coverage includes modern struggles over intellectual ownership claims (patents, copyrights, etc.). Prereq: E.M.B.A. candidates only.

EMBA 466. Legal Environment. 1.25 Unit.

This course provides a brief overview of the legal system that managers face, with an emphasis on contracts, corporate law, property rights and the modern regulatory apparatus of government. Contracts include full coverage of the Uniform Commercial Code. Corporate law is the capstone of the consideration of other forms of business organizations such as partnerships. Regulatory areas include employment law and environmental law. Property coverage includes modern struggles over intellectual ownership claims (patents, copyrights, etc.). Prereq: Executive MBA students only.

EMBA 471. Strategic Negotiations. 1.25 Unit.

Research shows that less than 4% of managers reach win-win outcomes. And even on issues for which people are in perfect agreement, they fail to realize it 50% of the time. The reason for this is three-fold: (1) lack of practice, (2) lack of knowledge about the principles and strategies of negotiation, (3) systematic mistakes and biases. This course will address all three areas. The remarkable thing about negotiations is that, wherever they occur, they are governed by similar principles. In this course, participants learn the theory and processes of negotiation in a variety of settings. They will develop an understanding of the principles, strategies, and tactics of effective negotiation, enhance their ability to assess the variables in negotiations and the impact of interpersonal styles and personality. In a series of varied bargaining simulations and debriefings built directly around real business issues, this program provides participants with the opportunity to develop their negotiation skills. Each simulation will highlight the central concepts that underlie negotiation strategy. These concepts are the fundamental building blocks for planning negotiation strategy, managing the negotiation process, and evaluating the quality of negotiation outcomes. Participants will be able to expand their negotiation tool-chest, explore their personal style and its impact, identify specific areas for individual development, and develop greater strategic flexibility across situations and people by trying out new behaviors and strategies in a safe, supportive environment. Prereg: E.M.B.A. candidates only.

EMBA 472. Leading Change: The Organization. 2.5 Units.

Participants in this course will be challenged to enhance their leadership capacity by assessing and analyzing the knowledge, abilities, values and interests relevant to executives. The course will also explore the art of reading and understanding organizations in ways that help us imagine, design, and develop organization excellence. Prereq: E.M.B.A. candidates only.

EMBA 473. Leading Change: Teams. 2.5 Units.

Sustainability of effective leadership is necessary for adaptive, resilient organizations and for the health and functioning of the leader. Chronic stress results in diminished cognitive functioning, as well as poor health and a contagion of negative mood in organizations. The latest advances in social neuroscience and endocrinology will be used to develop an understanding how someone in a leadership position can renew themselves and mitigate the ravages of chronic stress. The short course will focus on how to coach others toward renewal and sustainability. Prereg: E.M.B.A. candidates only.

EMBA 475. Managing in a Global Economy. 3 Units.

This course is designed to present first-hand issues in international management. It accomplishes this by means of readings, a written assignment and, most importantly, an international trip designed to witness different management cultures, styles and environments for business in the international community. Faculty responsibility rests with the Faculty Director of the E.M.B.A. Program as well as a "Resident -Faculty" specific to each field trip. Such faculty are drawn from the Weatherhead community and vary by the design and destination of the trip. In addition, the course is staffed by an administrative assistant from the complement of Dively CMDR staff. Occasionally and where appropriate, there is also "in-tourist" assistance in some of our foreign locations Prereq: E.M.B.A. candidates only.

EMBA 476. Corporate Governance and Dialogues in Healthcare. 1.25 Unit.

The course incorporates insights from leaders in a number of dialogue sessions and is grounded in the following themes: -The role of the board of directors; -Leadership in healthcare organizations; -The CEO relationship to the firm's principal stakeholders (shareholders, board of directors, employees, customers) and the CEO's responsibility to give back (time and money) to the community; -CEO role in developing and maintaining the organization's vision, values and corporate culture. Prereq: E.M.B.A. candidates only.

EMBA 478A. Leading Design in Organization. 1.25 Unit.

This course explores the ideas and methods of design as a new approach to management practices that is well suited to the changing environment that organizations face in contemporary culture and the emerging economic environment in the United States and abroad. It is a studio course as well as a seminar, because it is designed around a project that each student brings to the EMBA program, a project that is grounded in the issues and operations of the student's organization or in the kind of organization that the student wishes to explore. In addition to the yearlong project, the course will also include important readings in management and organizational literature that are relevant to the new direction of strategic thinking. Finally, the course will draw on the expertise of other faculty at the Weatherhead School of Management who will be called upon to share their practical expertise and theoretical knowledge in the development and execution of the student's management design project, whether in the area of vision and strategy, new product development of goods and services, operations, organizational design and configuration, or related topics. This is the first part of a two semester course. Prereq: E.M.B.A. candidates only.

EMBA 478B. Leading Design in Organizations. 1.25 Unit.

This course explores the ideas and methods of design as a new approach to management practices that is well suited to the changing environment that organizations face in contemporary culture and the emerging economic environment in the United States and abroad. It is a studio course as well as a seminar, because it is designed around a project that each student brings to the EMBA program, a project that is grounded in the issues and operations of the student's organization or in the kind of organization that the student wishes to explore. In addition to the yearlong project, the course will also include important readings in management and organizational literature that are relevant to the new direction of strategic thinking. Finally, the course will draw on the expertise of other faculty at the Weatherhead School of Management who will be called upon to share their practical expertise and theoretical knowledge in the development and execution of the student's management design project, whether in the area of vision and strategy, new product development of goods and services, operations, organizational design and configuration, or related topics. This is the second part of a two semester course. Prereq: E.M.B.A. candidates only.

EMBA 479. Leading Change: Society. 2.5 Units.

This course explores a proposition: that business, the motor of our society has the opportunity to be a new creative force on the planet, a force that could contribute to the well being of many. Our exploration and search is for "business as an agent of world benefit" and the questions are many: what does it look like, where is it happening, what are the market, societal and leadership enablers, and what are the results? Prereq: E.M.B.A. candidates only.

EMBA 480. Special Topics in Management. 1.25 Unit.

In today's rapidly evolving business landscape, executives must possess an understanding and knowledge of today and tomorrow's influential concepts, movements, trends, and topics to drive sustainable growth and maintain a competitive edge. This course will offer rotating special topic areas to provide a comprehensive exploration of current and future business landscapes, equipping executives with the knowledge and skills to navigate the complexities of modern business and drive sustainable growth. Students will have the opportunity to take this course six times, with a different special topic each time. Prereq: Enrolled in the Executive MBA program.

Entrepreneurship (ENTP)

ENTP 223. Value Proposition Design and Communication. 3 Units. Launching a startup is daunting. Creating a new business within an existing company can be just as difficult. In either case, succeeding takes vision, grit, and luck. However, innovators who can clearly describe how their business model is meant to create value can significantly improve their chances of success -- or more quickly move on to their next great idea. This course arms students with the tools to identify how a business idea is meant to create value, to see the risks and assumptions lurking underneath any new venture, and to effectively communicate it to others. Using a simple yet powerful framework, students will find, organize, and examine the universal building blocks within successful business models, and apply these techniques with innovators who are trying to bring their own innovations. This course also dives into the ethical dilemmas that are impacting innovators every single day and that are growing with importance every year, and introduces tools such as competitive intelligence, business case development, and creative problem solving. At the end of this course students should be able to quickly assess any innovation and the key assumptions upon which it is built. Whether students plan to join an existing organization or start their own, these tools will provide a foundation for creating and identifying sound, value-focused businesses. Counts as a Communication Intensive course.

ENTP 301. Entrepreneurial Strategy. 3 Units.

This course is designed to show students how to identify potential business opportunities, determine what constitutes a good business model, and to strategically implement a business proposal. Topics of focus include an overview of the entrepreneurial process, determinants of venture success in high tech and other business environments, and strategies for industry entry and venture growth. Prereq: At least Sophomore standing.

ENTP 302. Creativity in Design & Business: Sources of Perception, Imagination, & Creative Thinking. 3 Units.

The goal of this course is to develop skills and techniques for creative problem solving. The course is for anyone interested in design, the development of new products and services, and strategies for change in organizations and society. It is useful wherever we face challenging situations that require imagination, new ideas, and innovative approaches in a rapidly changing world. At its core, creativity is an issue of perception. Learning to change one's perception from what is known, comfortable, and familiar to what is unknown and potentially valuable and rewarding is the challenge of this course. We will explore a wide variety of methods, techniques, and tools for encouraging new perceptions. There will be useful readings, but also exercises and projects for individuals and teams to develop new strategies of creative thinking. Offered as DESN 302 and ENTP 302.

ENTP 308. Business Model Design and Innovation. 3 Units.

This course takes the perspective of entrepreneurs or business unit managers. The three basic questions that all entrepreneurs and intrepreneurs must answer is where to play, how to win and what to do. You have identified a group of customers for your product or service (where to play). Your first challenge is to know what features (Customer Attributes) your target customer will pay for. Innovative business models focus on a set of customer attributes that are usually very different from other industry incumbents that we call Focal Attributes. Your second challenge is to clearly state your profit logic -- how you will make money -how to win. The concept called Profit Objectives (similar but not the same as KPI and/or SMART objectives) allow you to operationalize the profit logic through specific and measurable deliverables. Your third challenge is building the value chain that can deliver these focal attributes (what to do). At this point, you have a good understanding of all the elements of your business model and in particular, how the focal attributes and the value chain align with the profit objectives. You will learn how to illustrate this alignment through a mapping process. Offered as DESN 308 and ENTP 308. Prereq: Junior standing or higher.

ENTP 310. Entrepreneurial Finance. 3 Units.

This course explores the financing and financial management of entrepreneurial new ventures. The course will focus on issues of financial management of new ventures (forecasting cash flows, cash flow management, valuation, capital structure) and the various financial methods and mechanisms available to entrepreneurs (bootstrapping, angel investors, venture capitalists, IPOs). Offered as ENTP 310 and ECON 312.

ENTP 311. New Venture Creation. 3 Units.

This course explores all aspects of the creation of a new venture from idea through startup, growth, and beyond. Students will learn how to evaluate opportunities, develop strategies, create a business plan and acquire financing for a new venture. In this course students will develop a business plan for a new venture.

ENTP 322. Social Entrepreneurship: Igniting Social Change. 3 Units.

Social entrepreneurs aspire to achieve systemic impact by launching new ventures and organizations to address problems such as poverty, inequity, and climate change. They are dedicated to deeply understanding the problem, then applying entrepreneurial thinking to create innovative solutions and services that create lasting change in an impactful, scalable, and sustainable way. Through case studies, invited speakers, and classroom discussions, students will progressively develop an understanding of the broader systems in which social or environmental challenges exist in order to investigate and identify solutions that benefit both communities and society as a whole. Topics explored in this course include the various social enterprise models (for-profit, nonprofit, and hybrid), social impact theory, mindsets and motivations of social entrepreneurs, Human Centered Design methodology, obtaining and managing resources, and evaluating success. Counts as a Communication Intensive course. Prereq: Academic Inquiry Seminar (AIQS) or SAGES First Seminar.

ENTP 323. Beyond Silicon Valley: Growing Entrepreneurship in Transitioning Economies. 3 Units.

The path for entrepreneurs to grow their companies outside of welldeveloped entrepreneurial ecosystems like Silicon Valley is challenging. Most markets around the world do not look like Silicon Valley and they never will. But there are other models to support new businesses. In transitioning markets (where entrepreneurs do not have much access to private sector financing), government officials, donors, and business leaders are experimenting with creative approaches to support the growth of entrepreneurs. Cleveland is one such place exploring innovative approaches to support new businesses. For over ten years, there has been a massive intervention of government and donor resources to cultivate this entrepreneurial ecosystem. Has this intervention worked in Cleveland? How should success be measured? How does Cleveland's approach differ from approaches elsewhere around the world? Counts as a Communication Intensive course. Prereq: Academic Inquiry Seminar (AIQS) or SAGES First Year Seminar.

ENTP 330. Building and Measuring Sustainable Business Models. 3 Units.

This course examines how social enterprises create, measure, and sustain meaningful impact through sustainable business models and innovative funding strategies. The course examines how successful social ventures maintain financial health while maximizing impact, with particular focus on funding strategies and performance measurement. Through case studies, invited speakers, and applied learning, students develop the skills to create financially sustainable social ventures while measuring their community impact. Counts as a Communication Intensive course. Prereq: Academic Inquiry Seminar (AIQS) or SAGES First Seminar.

ENTP 501. Special Problems and Topics. 1 - 18 Units.

Finance (FNCE)

FNCE 401. Financial Orientation. .5 Unit.

This is a mandatory preparatory/refresher course for all entering Master of Finance students. It will cover basic topics in statistics, financial accounting and in financial management, so that all students can hit the road running with the other core courses in the first semester. Prereq: For Master of Finance students only.

FNCE 403. Corporate Financial Technology. 3 Units.

This course is focused on the many aspects of the development in Financial Technology from recent notable successes to the current edge and thoughts about the future. Topics covered will include "FinTech" Applications, Incubators and Angels, Block Chains, Crypto-currencies, Crowdfunding, and Payment Schemes. Topics can change from semester to semester, in tune with changing technology. Offered as BAFI 403, FNCE 403 and FTEC 403. Prereq: For Master of Finance, or Financial Management, or Advanced Financial Management certificate students.

FNCE 403C. Financial Management. 1.5 Unit.

Serves as a perquisite for several advanced electives in banking and finance. Its purpose is to familiarize the student with the theory and application of models used in financial decision-making by corporations. Issues relating to efficient markets, financing decisions, capital budgeting, risk and return, and securities valuation are among the topics considered. Prereq: For Master of Finance students in Shanghai, China

FNCE 404. Financial Modeling. 3 Units.

This is a course about financial modeling. It covers a range of topics in the field of financial economics. Each topic is chosen because it lends itself to financial modeling. The primary focus of the course is to relate the theory of finance to practical and usable spreadsheet models that will assist a financial manager with a firm's investment and financing decisions. Spreadsheet models have been the dominant vehicle for finance professionals to practice their trade. This course will utilize Excel and challenge the student to improve their finance and modeling skills. Students will improve their familiarity with financial data analysis through various exercises that incorporate completed models. In summary, the course is designed to increase your practical understanding of core concepts in finance, help you develop hands-on spreadsheet modeling skills, and strengthen your ability to perform financial data analysis within an Excel model. Prereq: For Master of Finance, Financial Management certificate, or Quantitative Finance certificate students.

FNCE 404C. Financial Modeling & Value. 1.5 Unit.

Firms try to create value. In their day-to-day operations, they are faced with numerous challenges: Should we accept trade credit or borrow? Will an acquisition create or destroy value? Should we introduce a new product line even if it cannibalizes an existing one? In each of these situations they try to quantify the impact on the value of their firm. The goal of this course is to develop your skills in financial modeling and valuation, so you can tackle issues like the ones described above. The course is designed to be "hands-on": You will learn to apply the theory and develop spreadsheet modeling skills through homework, case studies and a group project. By the end of the course you will have a good understanding of both the theory and practice of valuation, and possess a set of cutting-edge financial modeling skills. This course is designed for students who aspire to work in a regular company, a bank or a consulting firm in (i) corporate finance (including mergers and acquisitions); (ii) strategy; or (iii) equity analysis. Prereq: For Master of Finance students in Shanghai, China

FNCE 411. Handling Financial Big Data with Python. 1.5 Unit.

Python has emerged as the preferred language for building Artificial Intelligence models, a key enabler technology in Fin Tech. Accordingly, Python will also be the language that relevant FinTech courses in our program may employ. This preparatory course introduces participants to the basics of the Python programming language. By carefully choosing examples and case studies from the field of Finance, this course also provides students an early experience of how Python is used in the Finance industry. Offered as FNCE 411 and FTEC 411.

FNCE 412. Algorithmic Trading. 3 Units.

Finding the right algorithm to automatically and successfully trade in financial markets is the holy grail in finance. Not too long ago, Algorithmic Trading was only available for institutional players with deep pockets and lots of assets under management. Recent developments in the areas of open source, open data, cloud computing and storage, as well as online trading platforms, have leveled the playing field for smaller institutions and individual traders - making it possible to get started in this fascinating discipline being equipped with a modern notebook and an Internet connection only. Coding experience required or consent of instructor required. This course aims to: - Trace the evolution of quantitative trading strategies, - Expose students to the landscape of different market datasets (e.g., Alpha Vantage), - Discuss linear regression models and logistic regression models, - Introduce select machine learning techniques, - Evaluate the performance of these trading strategies, - Provide an introduction to textual analysis Offered as BTEC 412, FNCE 412, and FTEC 412.

FNCE 414. Banking and RegTech. 3 Units.

The FinTech revolution is creating significant disruption to the traditional processes of managing and regulating banks. FinTech is also changing the way financial services and products are delivered. Investors still pour billions of dollars into new FinTech startups each year. Some commentators foresee a revolution in finance, where there will be no need for brick and mortar banks, or even physical money itself. The reality is likely to be a more gradual adoption and integration of innovative technology and mobile applications into the existing financial system. The big financial institutions are not going to go away. They will adapt. This course will: -Enable students to critically examine new Fin Tech services within the context and framework of traditional money, banks, and regulation. -Understand, assess and forecast FinTech's impact on banking. This is particularly important because proper management and oversight of financial institutions is essential to the efficient operation of the economy. -Explore RegTech and the various channels through which RegTech adds value to financial institutions. Offered as FNCE 414 and FTEC 414. Prereq: For Master of Finance students only.

FNCE 415. FinTech and Entrepreneurship. 3 Units.

Globally, the number of FinTech unicorns is growing. FinTech unicorns are start-ups that are privately owned and whose valuation exceeds \$1 bn. In this course, students will take on the role of a FinTech entrepreneur and learn how to: -Identify new opportunities, -Design new products, and -Evaluate the product-market fit. The course also introduces the various financing options that are available to a Fin Tech start-up at various stages of its lifecycle. Offered as FNCE 415 and FTEC 415.

FNCE 416. Managing Massive Financial Datasets. 1.5 Unit.

Several key breakthroughs in the field of banking and finance have been made on the basis of analyzing massive data sets. The goals of this course are to: - Familiarize students with key technologies used in organizing, accessing and manipulating big data in finance. - Expose students to basic platforms such as Hadoop, and to data storage techniques. - Demonstrate the power of data visualization for financial problems. Offered as FNCE 416 and FTEC 416.

FNCE 421. Corporate Financial Analysis. 3 Units.

This course is designed to lay the analytic foundation for careers in corporate finance, banking, consulting, and investment banking. The objective of the course is to strengthen students' conceptual understanding and problem-solving skills, and teach them how to think on their feet. Topics covered include Economic cash flows and valuation, Valuation methods, Long term financial planning and ratios analysis, Growth and external financing, Managerial options and valuation, Capital structure, and Payout policy. Topics covered may change from semester to semester. The course envisages use of spreadsheets and case studies, and will emphasize on links to real-world events. Prereq: For Master of Finance, Financial Management certificate, or Quantitative Finance certificate students.

FNCE 428. Financial Strategy and Value Creation. 3 Units.

The intersection between the theory of perfect markets and the reality of market imperfections provides the basis for the exploration of value creation in this course. Opportunities in both product and financial markets are explored using case studies to develop a framework for strategic financial decisions. Prereq: For Master of Finance, Financial Management certificate, or Advanced Financial Management certificate students.

FNCE 428C. Financial Strategies and Value Creation. 1.5 Unit.

The intersection between the theory of perfect markets and the reality of market imperfections provides the basis for the exploration of value creation in this course. Opportunities in both product and financial markets are explored using case studies to develop a framework for strategic financial decisions. Prereq: For Master of Finance students in Shanghai, China

FNCE 429. Investment Management. 3 Units.

This course explores the characteristics of financial investments and markets and develops modern techniques of investment analysis and management. The goal is to help students develop a level of analytical skill and institutional knowledge sufficient to make sensible investment decisions. Topics include: an overview of stock, debt and derivative asset markets, practical applications of modern portfolio theory, equilibrium and arbitrage-based approaches to capital market pricing, the debate over market efficiency, the term structure of interest rates, bond portfolio management, and uses of derivative assets in investment portfolios. Prereq: For Master of Finance or Financial Management certificate students.

FNCE 429C. Portfolio Management and Asset Allocation. 3 Units.

This course explores the characteristics of financial investments and markets and develops modern techniques of investment analysis and management. The goal is to help students develop a level of analytical skill and institutional knowledge sufficient to make sensible investment decisions. Topics include: an overview of stock, debt and derivative asset markets, practical applications of modern portfolio theory, equilibrium and arbitrage-based approaches to capital market pricing, the debate over market efficiency, the term structure of interest rates, bond portfolio management, and uses of derivative assets in investment portfolios. Prereq: For Master of Finance students in Shanghai, China

FNCE 430. Derivatives and Risk Management. 3 Units.

This course is intended to give students an understanding of options and futures markets both in theory and practice. The emphasis is on arbitrage and hedging. The course concentrates on listed common stock and index contracts as well as commodity markets. Various theories for trading strategies are studied. Prereq: For Master of Finance or Quantitative Finance certificate students.

FNCE 430C. Derivatives Markets and Models. 3 Units.

This course is intended to give students an understanding of options and futures markets both in theory and practice. The emphasis is on arbitrage and hedging. The course concentrates on listed common stock and index contracts as well as commodity markets. Various theories for trading strategies are studied. Prereq: For Master of Finance students in Shanghai, China

FNCE 431. Fixed Income Markets and Their Derivatives. 3 Units.

This class is concerned with fixed income securities, interest rate risk management, and credit risk. Fixed income securities account for about two thirds of the market value of all outstanding securities, and hence this topic is important. The course covers the basic products of fixed income markets including treasury and LIBOR products, such as interest rate swaps. Risk management and hedging strategies are covered as well as selected topics in credit risk models and mortgage-backed securities. Prereq: For Master of Finance or Advanced Quantitative Finance certificate students.

FNCE 431C. Fixed Income Markets and Models. 1.5 Unit.

This class is concerned with fixed income securities, interest rate risk management, and credit risk. Fixed income securities account for about two thirds of the market value of all outstanding securities, and hence this topic is important. The course covers the basic products of fixed income markets including treasury and LIBOR products, such as interest rate swaps. Risk management and hedging strategies are covered as well as selected topics in credit risk models and mortgage-backed securities. Prereg: For Master of Finance students in Shanghai, China

FNCE 432. Corporate Risk Management. 3 Units.

This is a risk management course aimed at participants who wish to enhance their understanding of the risks faced by corporate firms, both financial and non-financial, learn techniques to identify and measure these risks, and understand how derivatives and risk management solutions can be used to manage these risks, create value, and advance the strategic goals of the firm. Offered as BAFI 432 and FNCE 432. Prereq: For Master of Finance students only.

FNCE 432C. Corporate Risk Management. 1.5 Unit.

This is a unique strategic risk management course aimed at participants who wish to enhance their understanding of the risks faced by corporate firms, both financial and non-financial, learn techniques to identify and measure these risks, and understand how derivatives and risk management solutions can be used to manage these risks, create value, and advance the strategic goals of the firm. The course is designed in a manner such that it would be of use to executives of all corporations, financial and nonfinancial, across all functional areas. Prereq: For Master of Finance students in Shanghai, China

FNCE 433. Quantitative Risk Modeling. 3 Units.

This course is designed to help students learn quantitative models for estimating risk in various financial settings for different types of financial institutions (banks, hedge funds, and others). It is a very hands-on course where students will become familiar with several state-of-the-art quantitative risk models as well as their detailed implementation procedure in the real world. The course uses several inclass Excel exercises to illustrate the models as well as their practical implementation using real financial data. Offered as BAFI 433 and FNCE 433 and FTEC 433 Prereq: For Master of Finance or Advanced Quantitative Finance certificate students.

FNCE 433C. Quantitative Risk Modeling. 3 Units.

This course exposes students to state-of-the-art quantitative techniques in risk modeling. The course covers the analytical as well as simulation based implementation of different types of risk models using Excel, including several Value-at-Risk (VaR) models. It also covers volatility modeling, correlation estimation, extreme value theory, back-testing, and stress testing of risk models. This course is for Master of Finance (China) students. Prereq: For Master of Finance students in Shanghai, China

FNCE 434. Financial Analytics and Banking. 3 Units.

This course will cover empirical and analytical aspects of banking, including loan origination, syndication, sales, stress-testing and securitization; capital adequacy, regulation and supervision; methods of measuring and managing value at risk, credit risk, interest rate risk, liquidity risk, and other risk; credit market information, feedback, and signaling. Offered as BAFI 434 and FNCE 434. Prereq: For Master of Finance or Advanced Quantitative Finance certificate students.

FNCE 434C. Financial Econometrics. 3 Units.

This course represents a rigorous study of the latest developments in the area of financial econometrics. It assumes that you have had a basic statistics class and that you have had regression analysis. It is taught using economic motivations and examples from the financial world. The course concerns modern econometric topics like time-series forecasting, volatility modeling, and panel data analysis. Various concepts and approaches in the course will be subjected to real world data. Students are expected to have basic knowledge of the fundamentals of corporate finance and statistics. The course aims at providing a lasting conceptual framework for model building using modern applied econometric techniques commonly employed in finance. Prereq: For Master of Finance students in Shanghai, China

FNCE 435. Empirical Finance. 3 Units.

This course provides an introduction to empirical analysis and research in finance. This involves the management of empirical datasets and the aspects of quantitative applications of finance theory. The goal is to enable the student to deal with the need to analyze complex and large financial and economic datasets that is present in many fields of the financial profession. The scope of the data as well as the quantitative methods used in such analysis often requires familiarity with robust computational environments and statistical packages. As such, another goal of the course is to familiarize the student with at least one such environment. Applications are conducted using real financial and economic data. The course draws on the theoretical aspects of the subjects covered, but mainly focuses on the practical matters required to undertake an empirical analysis of financial topics--e.g., the definition of the research question, the datasets required, the computational needs, and, then, the implementation. The course enables the student to evaluate outstanding financial research as well as to conduct his or her own research. Offered as BAFI 435 and FNCE 435. Prereq: For Master of Finance or Quantitative Finance certificate students.

FNCE 436A. Individual, Team and Career Development. .75 Unit.

This course is designed to focus on three areas of development critical to students' personal and professional success: 1) Individual; 2) Team; and 3) Career. The individual and team aspects include developing self and other awareness through exploration of learning styles, process skills, and building communication and presentation competencies. Career development includes a focus on strategies for success such as networking, resume building, and learning from executives through intensive and interactive seminars. The course involves use of assessments, group discussions, presentations and experiential activities. Prereq: For Master of Finance students only.

FNCE 436B. Individual, Team and Career Development. 1.75 Unit.

This course is designed to focus on three areas of development critical to students' personal and professional success: 1) Individual; 2) Team; and 3) Career. The individual and team aspects include developing self and other awareness through exploration of learning styles, process skills, and building communication and presentation competencies. Career development includes a focus on strategies for success such as networking, resume building, and learning from executives through intensive and interactive seminars. The course involves use of assessments, group discussions, presentations and experiential activities. Prereq: For Master of Finance students only.

FNCE 436D. Individual, Team, and Career Development. 0 Unit.

This course is designed to focus on three areas of development critical to a student's personal and professional success: individual, team, and career development. This will be accomplished through a project with a company so that students get a real-life experience related to their field of study. This experience provides students with the opportunity to explore their career interests while applying knowledge learned in the classroom in a real-life setting. The experience also helps students build their professional networks and be part of a team assigned to work on the corporate project. Prereq: For Master of Finance students only.

FNCE 440. Financial Decisions Modeling and Analytics. 3 Units. The firm is a nexus of contracts among its various stakeholders (e.g., managers, shareholders, debt holders). In this course, we will examine Valuation, Quantitative Analysis of Real Options, Asymmetric Information, Agency Cost, Incentive Contracts and Performance Metrics, Regulation and Reputation. The takeaway learnings from this course are: (a) Understanding how value can be created or destroyed, (b) Measuring/ quantifying value using financial big data, (c) Understanding the links between capital structure and asymmetric information, market reactions and signaling, agency and management incentives, taxes and shareholder, bondholder conflicts, (d) Understanding the links between payout policy and informational content, market reaction, stock returns and signaling, and clientele effects, and (e) design of Performance Metrics. We will download corporate financial data (financial big data) from research databases, and conduct empirical analysis to understand the value implications of financial decisions. Excel/SAS will be used. We will analyze case studies and real-world events. Offered as BAFI 440 and FNCE 440. Prereq: For Master of Finance or Finance Certificate students only.

FNCE 440C. Financial Decisions, Contracting and Value. 1.5 Unit. This course exposes the students to in-depth treatment of topics that include investment decisions, financing decisions, payout decisions, contracting decisions and performance metrics, internal control systems, risk management, real options, diversification and valuation. Topics covered may vary from semester to semester. Prereq: For Master of Finance students in Shanghai, China

FNCE 441AC. Global Banking and Capital Markets I. 1.5 Unit. This course will expose students to Banking and Capital Market Structure, Practices, and Regulations. Topics covered include the financial services industry, especially commercial banking and investment banking, regulatory framework, market reactions to various corporate events, understanding risk, the return demanded by investors, activists involvement in target firms, and market reactions to such events. Several case studies are used to expose students to different issues and questions that arise in the day-to-day jobs of financial managers in this industry. Prereq: For Master of Finance students in Shanghai, China

FNCE 441BC. Global Banking and Capital Markets II. 1.5 Unit.

This course will expose students to Banking and Capital Market Structure, Practices, and Regulations. Topics covered include the financial services industry, especially commercial banking and investment banking, regulatory framework, market reactions to various corporate events, understanding risk, the return demanded by investors, activists involvement in target firms, and market reactions to such events. Several case studies are used to expose students to different issues and questions that arise in the day-to-day jobs of financial managers in this industry. Prereq: For Master of Finance students in Shanghai, China

FNCE 450. Mergers and Acquisitions. 3 Units.

This course examines the economic rationale and motivation for the different merger and acquisition and recapitalization activity undertaken by firms and individuals in the U.S. market. Emphasis is on the different three (3) methods of valuing a firm, the various forms of debt and equity capital employed to fund mergers and acquisitions and recapitalizations, how lenders and investors structure their loans and/or investments, and how investors realize the gains through different exit strategies. The course gives the student an excellent understanding of the role that senior commercial banks, insurance companies, pensions funds, LBO funds, investment banking firms, and venture/growth capital investors play in mergers and acquisitions. Prereq: For Master of Finance, Financial Management, or Advanced Financial Management certificate students.

FNCE 455C. A Foundation in Basic Concepts of Innovations and Applications for Financial Technology. 3 Units.

Over last few years, field of finance has experienced a burst of technological advances that have disrupted and transformed traditional methods of accessing, allocating, and transferring capital. Understanding the evolution of traditional finance methods is increasingly important for finance students so they can meaningfully distinguish advantages and disadvantages of traditional versus emerging methods and models. Main objective of course is to provide foundation in basic concepts of these innovations and their applications. It is this collective financial technology focus that has garnered the name of FinTech. This course will cover many aspects of FinTech proliferation, from notable successes to current innovations and thoughts about future opportunities. Topics will include FinTech applications, blockchains, cryptocurrencies, crowdfunding, payment systems and trading technology. This list may change from semester to semester, in tune with changing technology and as business models become disrupted. Prereq: For Master of Finance students in Shanghai, China

FNCE 460. Investment Strategies. 3 Units.

This course provides a broad survey of some of the main strategies used by hedge funds today. Through exercises and projects, the hedge fund strategies will be presented using real data. Students will learn to use a methodology referred to as "back testing" in order to evaluate hedge fund strategies. The course will also cover institutional details related to short selling, liquidity, margin requirements, risk management, and performance measurement. Since hedge funds today use advanced modeling techniques, the course will require students to analyze and manipulate real data using mathematical modeling. The objective of the course is for students to gain practical knowledge about creating, back-testing, and implementing hedge fund trading strategies. Offered as BAFI 460 and FNCE 460. Prereq: For Master of Finance students only.

FNCE 460C. Investment Strategies. 1.5 Unit.

The class describes some of the main strategies used by hedge funds and provides a methodology to analyze them. In class and through exercises, the strategies will be illustrated using real data and students will learn to use "back testing" to evaluate a strategy. Throughout the semester, we will discuss the economics underlying these strategies and we will analyze why certain strategies might work and why others might not. The class also covers institutional issues related to short selling, liquidity, and performance measurement. The class is fairly quantitative. As a result of the advanced techniques used in state-of-theart hedge funds, the class requires the students to work hard, analyze and manipulate real data, and use mathematical modeling. Prereq: For Master of Finance students in Shanghai, China

FNCE 470. Financial Models Using Big Data. 3 Units.

This course is focused on developing models in investments using financial big data. A strong theoretical base will be developed and then relevant empirical analyses using real data will be used for testing models, via individual assignments and group projects. In the projects, groups of students will be immersed in collecting, analyzing, and interpreting financial big data sets. Prereq: For Master of Finance students only.

FNCE 471. Applications in Financial Big Data. 3 Units.

This course is project-based and focused on solving real-life problems using financial big data. Groups of students will collect/use data, estimate parameters, and conduct appropriate validation tests. Not only do the members have to work together, but they also have to be professional, make interim reports, and communicate effectively with each other. Prereq: For Master of Finance students only.

FNCE 480. Global Banking & Capital Markets. 3 Units.

This course will expose students to Banking and Capital Market Structure, Practices, and Regulations in North America, Europe, as well as Asia. Students will learn about structure of the financial services industry in different parts of the world, the history and evolution of the regulatory frameworks in this industry, and its consequent impact on financial and economic development as well as risk. Several case studies are used to expose students to different issues and questions that arise in the day-today jobs of financial managers in this industry. Offered as BAFI 480 and FNCE 480. Prereq: For Master of Finance students or Advanced Financial Management Certificate students only.

FNCE 480C. International Finance. 1.5 Unit.

This course introduces students to international finance and foreign exchange risk management by corporations. Topics include foreign exchange markets and international financial institutions; fx contracts; exchange rate risk and corporate risk management; and international aspects of long-term financing. Prereq: For Master of Finance students in Shanghai, China

FNCE 491. Python Programming w Appl in Finance. 3 Units.

There are two parts to this course. (i) In the first part we learn the basics of Python programming language by solving a sequence of rather simple problems each focusing on broadening your knowledge. At each stage we introduce important commands of Python and slowly learn the structure of object oriented programming with Python. The objective is to make you Python literate. (ii) The second part of the class is for you to tackle significant financial problems either in risk management or in corporate finance using the Python language as the primary tool to do the analysis. You will develop a series of financial models in your track and then tackle two major projects which will utilize all the skills developed. Offered as BAFI 491 and FNCE 491. Prereq: For Master of Finance students only.

FNCE 493. Blockchains, Cryptocurrencies, and Cryptoventures. 3 Units.

It behooves today's business leaders to be well acquainted with blockchain technologies and AI, two seemingly disparate technologies that have the potential to fundamentally disrupt a wide range of businesses. The popularity of blockchain technologies has increased exponentially since the release of bitcoin in 2009. While bitcoins garnered a lot of attention during the initial days, the focus has shifted over time to the underlying technology: blockchain. This wildly innovative technology has made possible tasks that were hitherto deemed implausible: validate ownership in a digital asset, verify the true state of a transaction without relying on a costly intermediary etc. Accurate predictions and sound judgements are two critical ingredients of any decision making process. While the jury is still out on whether algorithms can make sound judgements, recent developments in a field called machine learning (and its sub-field, deep learning) have led to dramatic improvements in the accuracy of predictions made by these algorithms. Significantly, this gain in accuracy has been accompanied by a reduction in overall costs. These in turn have spurred the recent interest in AI. Organizations that have enabled AI at the enterprise level appear to be making more informed decisions and innovating new products. In this course, we will unpack these technologies and examine a wide range of relevant business use cases. Our objective is to provide a practical introduction to these key technologies and their business implications. We focus on business perspectives, rather than on the technical dimensions. Fittingly, this course is open to all graduate students of Weatherhead School (MBA and all specialty Masters). Students are not expected to have any specific programming background; however, a basic understanding of statistics is required to better appreciate the discourse on Artificial Intelligence. Offered as BTEC 493, FNCE 493 and FTEC 493. Prereq: For Master of Finance students only.

FNCE 494. Artificial Intelligence for Financial Modeling. 3 Units.

This is a hands-on course on Artificial Intelligence (A.I.) where the emphasis is not only on understanding the theoretical underpinnings of various AI models but also on building, evaluating, and critiquing A.I. models as they apply to the finance industry. This course begins with an introduction of Machine Learning models; various key ideas such as bias-variance tradeoff, cross-validation, regularization techniques are introduced with relevant examples from Finance. The course then proceeds to discuss Artificial Neural Networks and its relevance to Deep Learning. Foundational ideas such as back-propagation are discussed in sufficient detail; we also lay a lot of emphasis on evaluating the performance of all these models. A key objective of this course is help students build cutting-edge A.I. models that are ready for prime time, i.e., real-life applications. Fittingly, we work with several real-life datasets and case studies from banking and finance. We will work with three case studies, each of which span multiple sessions. -In the first case study, students use Machine Learning algorithms to understand how imbalanced datasets are handled in real-life. -In the second study, students use time series data and learn not only about the power of regularization techniques but also to highlight the prominence of A.I. in financial markets. -In the third case study, students learn how to use cutting-edge Deep Learning models to extract sentiments from disparate news sources; these are in turn used to generate trading strategies. By contrasting the effort that goes into and the payoff obtained from Machine Learning and Deep Learning models, students gain an intuitive appreciation of both these classes of models. Offered as BTEC 494, FNCE 494 and FTEC 494. Prereg: For Master of Finance students only.

FNCE 500. Projects in Finance. 3 Units.

This course is focused on engaging groups of students in identifying, analyzing and making decisions on real-world corporate financial problems. Teams of students will be assigned to a client situation drawn from specific areas in finance and work with an industry sponsor in developing the solution. The goal of the course is to immerse the student in an experiential assignment within a real financial discipline with the assistance through mentoring and/or feedback from real finance professionals. After completing your work, each team will present their findings to the professors, their classmates and, most importantly, to a panel of industry professionals. This course is structured to be a capstone experience that allows students to leverage the broad range of skills, tools and approaches introduced throughout the program. It is intended to provide an important bridge from work in the classroom to the unstructured nature of real world business. Offered as BAFI 490 and FNCE 490.

FinTech (FTEC)

FTEC 403. Corporate Financial Technology. 3 Units.

This course is focused on the many aspects of the development in Financial Technology from recent notable successes to the current edge and thoughts about the future. Topics covered will include "FinTech" Applications, Incubators and Angels, Block Chains, Crypto-currencies, Crowdfunding, and Payment Schemes. Topics can change from semester to semester, in tune with changing technology. Offered as BAFI 403, FNCE 403 and FTEC 403.

FTEC 411. Handling Financial Big Data with Python. 1.5 Unit.

Python has emerged as the preferred language for building Artificial Intelligence models, a key enabler technology in Fin Tech. Accordingly, Python will also be the language that relevant FinTech courses in our program may employ. This preparatory course introduces participants to the basics of the Python programming language. By carefully choosing examples and case studies from the field of Finance, this course also provides students an early experience of how Python is used in the Finance industry. Offered as FNCE 411 and FTEC 411.

FTEC 412. Algorithmic Trading. 3 Units.

Finding the right algorithm to automatically and successfully trade in financial markets is the holy grail in finance. Not too long ago, Algorithmic Trading was only available for institutional players with deep pockets and lots of assets under management. Recent developments in the areas of open source, open data, cloud computing and storage, as well as online trading platforms, have leveled the playing field for smaller institutions and individual traders - making it possible to get started in this fascinating discipline being equipped with a modern notebook and an Internet connection only. Coding experience required or consent of instructor required. This course aims to: - Trace the evolution of quantitative trading strategies, - Expose students to the landscape of different market datasets (e.g., Alpha Vantage), - Discuss linear regression models and logistic regression models, - Introduce select machine learning techniques, - Evaluate the performance of these trading strategies, - Provide an introduction to textual analysis Offered as BTEC 412, FNCE 412, and FTEC 412.

FTEC 414. Banking and RegTech. 3 Units.

The FinTech revolution is creating significant disruption to the traditional processes of managing and regulating banks. FinTech is also changing the way financial services and products are delivered. Investors still pour billions of dollars into new FinTech startups each year. Some commentators foresee a revolution in finance, where there will be no need for brick and mortar banks, or even physical money itself. The reality is likely to be a more gradual adoption and integration of innovative technology and mobile applications into the existing financial system. The big financial institutions are not going to go away. They will adapt. This course will: -Enable students to critically examine new Fin Tech services within the context and framework of traditional money, banks, and regulation. -Understand, assess and forecast FinTech's impact on banking. This is particularly important because proper management and oversight of financial institutions is essential to the efficient operation of the economy. -Explore RegTech and the various channels through which RegTech adds value to financial institutions. Offered as FNCE 414 and FTEC 414. Prereq: For FinTech Certificate students only.

FTEC 415. FinTech and Entrepreneurship. 3 Units.

Globally, the number of FinTech unicorns is growing. FinTech unicorns are start-ups that are privately owned and whose valuation exceeds \$1 bn. In this course, students will take on the role of a FinTech entrepreneur and learn how to: -Identify new opportunities, -Design new products, and -Evaluate the product-market fit. The course also introduces the various financing options that are available to a Fin Tech start-up at various stages of its lifecycle. Offered as FNCE 415 and FTEC 415.

FTEC 416. Managing Massive Financial Datasets. 1.5 Unit.

Several key breakthroughs in the field of banking and finance have been made on the basis of analyzing massive data sets. The goals of this course are to: - Familiarize students with key technologies used in organizing, accessing and manipulating big data in finance. - Expose students to basic platforms such as Hadoop, and to data storage techniques. - Demonstrate the power of data visualization for financial problems. Offered as FNCE 416 and FTEC 416.

FTEC 433. Quantitative Risk Modeling. 3 Units.

This course is designed to help students learn quantitative models for estimating risk in various financial settings for different types of financial institutions (banks, hedge funds, and others). It is a very hands-on course where students will become familiar with several state-of-the-art quantitative risk models as well as their detailed implementation procedure in the real world. The course uses several inclass Excel exercises to illustrate the models as well as their practical implementation using real financial data. Offered as BAFI 433 and FNCE 433 and FTEC 433 Prereq: Full time MBA STEM track and MBAC 504 and MBAC 505.

FTEC 460. Investment Strategies. 3 Units.

This course provides a broad survey of some of the main strategies used by hedge funds today. Through exercises and projects, the hedge fund strategies will be presented using real data. Students will learn to use a methodology referred to as "back testing" in order to evaluate hedge fund strategies. The course will also cover institutional details related to short selling, liquidity, margin requirements, risk management, and performance measurement. Since hedge funds today use advanced modeling techniques, the course will require students to analyze and manipulate real data using mathematical modeling. The objective of the course is for students to gain practical knowledge about creating, back-testing, and implementing hedge fund trading strategies. Offered as BAFI 460 and FNCE 460. Prereq: Full time MBA STEM track and MBAC 504 and MBAC 505. FTEC 493. Blockchains, Cryptocurrencies, and Cryptoventures. 3 Units. It behooves today's business leaders to be well acquainted with blockchain technologies and AI, two seemingly disparate technologies that have the potential to fundamentally disrupt a wide range of businesses. The popularity of blockchain technologies has increased exponentially since the release of bitcoin in 2009. While bitcoins garnered a lot of attention during the initial days, the focus has shifted over time to the underlying technology: blockchain. This wildly innovative technology has made possible tasks that were hitherto deemed implausible: validate ownership in a digital asset, verify the true state of a transaction without relying on a costly intermediary etc. Accurate predictions and sound judgements are two critical ingredients of any decision making process. While the jury is still out on whether algorithms can make sound judgements, recent developments in a field called machine learning (and its sub-field, deep learning) have led to dramatic improvements in the accuracy of predictions made by these algorithms. Significantly, this gain in accuracy has been accompanied by a reduction in overall costs. These in turn have spurred the recent interest in AI. Organizations that have enabled AI at the enterprise level appear to be making more informed decisions and innovating new products. In this course, we will unpack these technologies and examine a wide range of relevant business use cases. Our objective is to provide a practical introduction to these key technologies and their business implications. We focus on business perspectives, rather than on the technical dimensions. Fittingly, this course is open to all graduate students of Weatherhead School (MBA and all specialty Masters). Students are not expected to have any specific programming background; however, a basic understanding of statistics is required to better appreciate the discourse on Artificial Intelligence. Offered as BTEC 493, FNCE 493 and FTEC 493. Prereq: For FinTech certificate students only.

FTEC 494. Artificial Intelligence for Financial Modeling. 3 Units.

This is a hands-on course on Artificial Intelligence (A.I.) where the emphasis is not only on understanding the theoretical underpinnings of various AI models but also on building, evaluating, and critiquing A.I. models as they apply to the finance industry. This course begins with an introduction of Machine Learning models; various key ideas such as bias-variance tradeoff, cross-validation, regularization techniques are introduced with relevant examples from Finance. The course then proceeds to discuss Artificial Neural Networks and its relevance to Deep Learning. Foundational ideas such as back-propagation are discussed in sufficient detail; we also lay a lot of emphasis on evaluating the performance of all these models. A key objective of this course is help students build cutting-edge A.I. models that are ready for prime time, i.e., real-life applications. Fittingly, we work with several real-life datasets and case studies from banking and finance. We will work with three case studies, each of which span multiple sessions. -In the first case study, students use Machine Learning algorithms to understand how imbalanced datasets are handled in real-life. -In the second study, students use time series data and learn not only about the power of regularization techniques but also to highlight the prominence of A.I. in financial markets. -In the third case study, students learn how to use cutting-edge Deep Learning models to extract sentiments from disparate news sources; these are in turn used to generate trading strategies. By contrasting the effort that goes into and the payoff obtained from Machine Learning and Deep Learning models, students gain an intuitive appreciation of both these classes of models. Offered as BTEC 494, FNCE 494 and FTEC 494.

Health Systems Management (HSMC)

HSMC 325. Dialogues in Healthcare Management. 3 Units. Dialogues in Healthcare Management explores the array of managerial roles that people play within the healthcare economy and exposes students to specific management and leadership challenges that arise in those roles. This is accomplished through facilitated dialogs with experienced healthcare management professionals. Drawing on the experiences and deep contextual knowledge of these professionals, the course provides students an opportunity to synthesize and apply their prior coursework to better understand the challenges and opportunities that managers face to improve organizational performance and succeed in an evolving healthcare marketplace. Other graduate students may request permission of the instructor. Offered as HSMC 325 and HSMC 425. Prereq or Coreq: ECON 378.

HSMC 404. Managing People and Organizations. 3 Units.

Examines the behavioral sciences relevant to the effective management of people and the effective design of human resources system, structure and policies. Topics include leadership, change management, motivation and pay systems, team dynamics, staffing, decision making, organizational communications, employee participation, performance appraisal, conflict management, negotiation, work design, organizational design, and organizations culture. A variety of methods, including experiential and interactive learning methods, are used to study these topics. Prereq: Master of Healthcare Management students only.

HSMC 407. Managerial Marketing. 3 Units.

Through lecture, discussion, cases, projects and/or simulations you will learn theory and practice of how firms develop processes to understand, create and deliver "triple bottom line" value (i.e., economic, social and environmental) to business and/or consumer markets. Specifically in this course, we take the perspective that marketing is a process of creating value for firms, customers, and other stakeholders through mutually desirable exchanges. This is the foundation of a customer orientation and a central theme of market-driven management. Methods for strategic marketing planning, understanding buyer behavior, market analysis, segmentation and devising integrated marketing programs are introduced. Prereq: Master of Healthcare Management students only.

HSMC 411. Identifying Design Opportunities. 3 Units.

Designing is giving form to an idea for a more desirable product, service, process or organization, and refining the idea into something that can be delivered reliably and efficiently. Good design integrates these evolving ideas with the day-to-day realities of a firms' operations, systems, marketing, economics, finance and human resources. Designing is thus a unique managerial activity that brings together changing technologies, capabilities, relationships, activities and materials to shape an organization's plans and strategies. It combines analysis and synthesis to create opportunities for improvement and means of attaining them. Viewed this way, designing is a core competence of a successful entrepreneur or innovative leader. Design analysis is the systematic review of the four orders of design found in every firm--namely, the firm's communications, products, interactions and environments--and the creation of opportunities to increase firm value by improving each. Students will identify ill-defined, ill-structured problems within organizations. Such problems are ones for which there are no definitive formulations and for which the formulation chosen affects the solutions available. For such problems, there is no explicit way of knowing when you have reached a solution, and solutions cannot necessarily be considered correct or incorrect. But finding innovative solutions to such problems can provide unique opportunities to create exceptional value. A major outcome of the semester's inquiry is a presentation of the design problem and proposed design solution. Prereq: Master of Healthcare Management students only.

HSMC 412. Lean Services Operations. 3 Units.

The course will be delivered over four modules: 1) Service Process Blueprints, 2) Managing Capacity in Service Systems, 3) Mapping the Value Stream (current and future state), and 4) Inventory Management in Service Systems. The topics considered are viewed in the context of healthcare management, financial services, insurance firms, call centers, back-office operations, and other applications. Through these topics, the participants will be trained in tools that help them understand customers' expectations and needs and to identify service system characteristics that can meet these needs. We will learn how to identify errors in service and troubleshoot these problems by identifying the root causes of errors. Subsequently, we will discuss how one can modify the product or service design so as to prevent defects from occurring. Finally, we will establish performance metrics that help evaluate the effectiveness of the Lean system in place. These efforts will result to improved quality. This course is not oriented toward specialists in service management. Its goal is to introduce you to the environments and help you appreciate the problems that operations managers are confronted with. Then, we will typically discuss some system specifics and emphasize the principles and issues that play key role in their management. Offered as HSMC 412 and OPMT 412. Prereq: Master of Healthcare Management students only.

HSMC 420. Health Finance. 3 Units.

Exploration of economic, medical, financial and payment factors in the U.S. healthcare system sets the framework for the study of decisions by providers, insurers, and purchasers in this course. The mix of students from various programs and professions allows wide discussion from multiple viewpoints. Offered as BAFI 420 and HSMC 420. Prereq: (MBAP 402 or MBAC 502 or ACCT 401H) and Master of Healthcare Management students only.

HSMC 421. Health Economics and Strategy. 3 Units.

The purpose of this course is to develop the analytical skills necessary for understanding how the U.S. health care sector operates, how it has evolved, the forces at work behind perceived deficiencies (in quality and cost control), and the impact of alternative policy proposals. Special attention is giving to recent developments in the healthcare marketplace, and the strategic considerations they create for providers and insurers. These issues are addressed through the lens of microeconomic theory. Under this framework, outcomes result from the interaction of decisions made by participants in the healthcare economy (e.g. patients, providers, insurers, government), with those decisions governed by the preferences, incentives and resource constraints facing each decision-maker. Principles of microeconomics will be reviewed as necessary to ensure consistent understanding of basic concepts. The course is designed to appeal to a broad audience, particularly students interested in healthcare management, public health, medical innovation, health law, and public policymaking. Offered as HSMC 421 and MPHP 421.

HSMC 425. Dialogues in Healthcare Management. 3 Units.

Dialogues in Healthcare Management explores the array of managerial roles that people play within the healthcare economy and exposes students to specific management and leadership challenges that arise in those roles. This is accomplished through facilitated dialogs with experienced healthcare management professionals. Drawing on the experiences and deep contextual knowledge of these professionals, the course provides students an opportunity to synthesize and apply their prior coursework to better understand the challenges and opportunities that managers face to improve organizational performance and succeed in an evolving healthcare marketplace. Other graduate students may request permission of the instructor. Offered as HSMC 325 and HSMC 425. Prereq: Graduate Weatherhead School of Management students and Master of Public Health students.

HSMC 432. Health Care Information Systems. 3 Units.

This course covers concepts, techniques and technologies for providing information systems to enhance the effectiveness and efficiency of health care organizations. Offered as HSMC 432 and MPHP 532.

HSMC 456. Health Policy and Management Decisions. 3 Units.

This seminar course combines broad health care policy issue analysis with study of the implications for specific management decisions in organizations. This course is intended as an applied, practical course where the policy context is made relevant to the individual manager. Offered as HSMC 456 and MPHP 456.

HSMC 457. Health Decision Making & Analytics. 3 Units.

The goals of this course are to: (1) introduce the sources of data healthcare that managers can exploit to improve decision-making in their organizations; (2) examine health decision making styles, approaches and impediments; (3) provide a framework for medical informatics and how information technology can be exploited to pursue organizational goals;; and (4) examine the analytic tools necessary for turning "raw data" into actionable information. The course is pragmatic, covering such issues as the current state and emerging trends in medical informatics (MI), information principles, decision models and analytics approaches, as well as the impact of emerging health legislation, information systems and processes on decisions and analytics.

HSMC 501. Special Problems and Topics. 1 - 18 Units.

This course is offered, with permission, to students undertaking reading in a field of special interest.

Leadership and Organizational Change (LEOC)

LEOC 413. Appreciative Inquiry & the Positive Organizational Scholarship of Change Leadership. 2.5 Units.

This course explores and develops the art of reading and understanding social systems in ways that help us imagine, design and develop organization excellence. First it seeks to show how many of our conventional ideas about organizations are based on discourse and metaphors that lead us to see and understand organizations in partial and often limiting ways. Growing research from the domains of Positive Psychology and Positive Organization Scholarship and the theory and practice of Appreciative Inquiry will be explored to show how we can create new and more positive, strength-based ways of designing and developing social systems. Includes presentations, guest lectures and panel discussions on current topics of interest for the Master of Science in Leadership and Organizational Change (MLOC) candidates. Led by a faculty member of the Department of Organization Behavior, these dialogues and seminars will be presented in several of the six main residencies of the MLOC program. Reflective essays and integrative papers will enable participants to explore their practice of OD, leadership capacity, application of learnings from the program and deeply held values related to current issues and opportunities in the domain of human systems change and development. Prereg: Enrolled in the Master of Science in Leadership and Organizational Change (MLOC) program.

LEOC 414A. Managing Organizational Change and Real-World Challenges. 1 Unit.

This is a hands-on course designed to provide students with the direct experience of tackling specific challenges assigned by the instructor in one of four thematic areas of mastery: 1) Leadership (emotionally intelligent leadership, or coaching with compassion) 2) Inclusive Leadership (diversity, equity, and inclusion) 3) OD & Systemic Change (appreciative inquiry, BAWB, positive impact interventions) 4) Team Effectiveness (managing & facilitating teams effectively or building and managing high performance teams). This is part one of a two-part course. Prereq: Enrolled in the Master of Science in Leadership and Organizational Change (MLOC) program.

LEOC 414B. Managing Organizational Change and Real-World Challenges. 2 Units.

This is a hands-on course designed to provide students with the direct experience of tackling specific challenges assigned by the instructor in one of four thematic areas of mastery: 1) Leadership (emotionally intelligent leadership, or coaching with compassion) 2) Inclusive Leadership (diversity, equity, and inclusion) 3) OD & Systemic Change (appreciative inquiry, BAWB, positive impact interventions) 4) Team Effectiveness (managing & facilitating teams effectively or building and managing high performance teams) This is part two of a two-part course. Offered as LEOC 414B and MPOD 414B. Prereq: LEOC 414A.

LEOC 416. Coaching for Leadership Effectiveness and Development. 2.5 Units.

Leadership with emotional intelligence will be examined by studying a number of topics and applying them to two major case studies: 1) a CEO; and 2) yourself. In this context, coaching the development of leadership will be a major topic throughout the course. This course will explore questions such as: Who are effective leaders? Are they different from effective managers? How do they think and act? What makes us want to follow them? How are leaders developed? What and how can people (you) help/coach others develop their competencies to become more effective leaders? Prereq: Enrolled in the Master of Science in Leadership and Organizational Change (MLOC) program.

LEOC 418. Flourishing Enterprise. 2 Units.

Global issues such as climate change and food security, as well as heightened expectations for personal health and well-being in the workplace, are introducing greater levels of complexity into business strategy and operations, with far-reaching implications for customer satisfaction and employee engagement. Effective handling of these issues can lead to new sources of revenue generation and cost efficiency, as well as reputational value, while failure to do so can lead to financial and competitive risk. Offered as LEOC 418 and MPOD 418. Prereq: Enrolled in the Master of Science in Leadership and Organizational Change (MLOC) program.

LEOC 431A. Team Effectiveness and Dynamics. 2 Units.

The objectives of this course are to: Develop the capacity to see and assess team development. Recognize and understand the characteristics of effective teams and groups. Practice observing, intervening, and using team skills. Facilitate integration of your unique perspective, skills, and talents in working with teams. Further prepare you to be an effective team leader, team facilitator, consultant to team leaders and team members. This is part one of a two-part course. Prereq: Enrolled in the Master of Science in Leadership and Organizational Change (MLOC) program.

LEOC 431B. Team Development and Dynamics. 1 Unit.

The objectives of this course are to: Develop the capacity to see and assess team development. Recognize and understand the characteristics of effective teams and groups. Practice observing, intervening, and using team skills. Facilitate integration of your unique perspective, skills, and talents in working with teams. Further prepare you to be an effective team leader, team facilitator, consultant to team leaders and team members. This is part two of a two-part course. Offered as LEOC 431B and MPOD 431B. Prereq: LEOC 431A.

LEOC 432. Interpersonal Skills Building for Transforming Organizations. 2.5 Units.

Interpersonal and team dynamics. It will help you build more open and effective relationships among peers and clients by improving your ability to cooperate with and lead others to work effectively in today's increasingly team-oriented organizations. The emphasis of this course is on learning about oneself in the context of others and using these insights to facilitate learning in the groups you lead. Prereq: Enrolled in the Master of Science in Leadership and Organizational Change (MLOC) program.

LEOC 435. Practicum in Appreciative Inquiry and Positive OD. 3 Units. This course develops participants' consultative skills. Competence in role entry and development, data collection, intervention and evaluation is gained through class exercises and field projects. The focus is on developing a problem-centered approach to intervening in organizations that minimizes reliance on programmed techniques and maximize collaborative innovation and learning between client and consultant. Prereq: Enrolled in the Master of Science in Leadership and Organizational Change (MLOC) program.

LEOC 439. Individual Mastery Projects. 3 Units.

The objectives of this course are to: 1) demonstrate the ability to frame and design a clear cut action research project applied to a given organizational development challenge or improvement opportunity; 2) show the ability to engage and mobilize others in a collaborative effort toward a collective outcome; 3) employ a defined change process and use theory from the field of OD (e.g., AI, EI, Sustainability, Organization Design, Strategic Thinking, etc.) to inform practice; 4) evince the ability to sustain momentum during the course of a project, while navigating the complexities that one normally encounters in an effort to complete the action research cycle; 5) provide evidence that theorganization development change project has had a positive benefit or impact; and 6) reveal sufficient self-reflection and mindfulness in ways that further your own and others personal or professional development. These six objectives will fundamentally be the same competencies that I will look for in grading Part 1 and Part 2 of your assignment. Toward these ends, you are expected to plan and execute a significant organization development, and/or change project with an ongoing client or employer. Emphasis is placed on the craft of developing projects that are consistent with one's current skills, career plans, and developmental needs that can be combined with the needs, opportunities, readiness, and resources of the client organization. Offered as LEOC 439 and MPOD 439. Prereq: Enrolled in the Master of Science in Leadership and Organizational Change (MLOC) program.

LEOC 440. Inclusive Leadership. 3 Units.

The purpose of this course is to help you understand the current theories and effective practices of inclusive leadership, and through this understanding, to help you enhance your own leadership practices and capabilities. We will examine the methods, challenges, trade-offs, and frontiers of inclusive leadership through application of leadership concepts to case studies. Student teams will identify and conduct an at-a-distance project studying a global executive. The course will facilitate the development of personal efficacy for working with and supervising diverse others-those from different nations/cultures, races/ ethnicities, genders, age groups, religions and lifestyles who may have different values, perspectives, approaches and abilities. As you gain self-awareness of the impact of your own identity, you will clarify your own approaches and styles and become more authentic as a leader and change agent. You will also develop practical knowledge about enabling team cultures of engagement and inclusion. Prereq: Enrolled in the Master of Science in Leadership and Organizational Change (MLOC) program.

LEOC 470. Leading Change from a Complexity Perspective. 2.5 Units. In this course, we will continuously attempt to answer two questions: (1) What is the process of sustained, desirable change? and (2) What is the role of a leader? Concepts from complexity theory will be used, including understanding the multilevel nature of SDC at the individual, dyad, team, organization, community, country, and global levels. Intentional Change Theory (ICT) will be used as the organizing concept for the changes studied. In this context, coaching the development of leadership will be a major topic throughout the course. Prereq: Enrolled in the Master of Science in Leadership and Organizational Change (MLOC) program.

LEOC 479. Organization Innovation. 3 Units.

This course focuses on the creative process and innovation journey at all levels – individual, group, organization, and leadership. In this class we will explore creativity from several angles with a particular focus on the conditions that facilitate creativity and innovation. Offered as LEOC 479 and MPOD 479. Prereq: Enrolled in the Master of Science in Leadership and Organizational Change (MLOC) program.

LEOC 480. Dynamics of Creativity and Innovation in Organizations. 3 Units.

This course focuses on the creative process and innovation journey at all levels -- individual, group, organization, and leadership. In this class we will explore creativity from several angles with a particular focus on the conditions that facilitate creativity and innovation. This course will: 1) highlight the major current trends and changes that affect the nature of managerial work; 2) describe how OD practitioners and consultants need to factor such trends into their consulting strategies; 3) differentiate between types of interventions, the circumstances in which they apply and their unique strengths; 4) provide background theories that explain the challenges inherent in mobilizing positive change; 5) describe ways to bridge the gap between knowing and doing in order to build organization resilience; and 6) introduce a variety of consulting techniques and skills that the students can add to their repertoire. Prereq: Enrolled in the Master of Science in Leadership and Organizational Change (MLOC) program.

MBA Core (MBAC)

MBAC 499. Introduction to Learning Skills. 0 Unit.

This course is designed to introduce you to the Weatherhead School of Management (WSOM) community, highlight critical support services to assist you as you transition to campus life, and prepare you for a successful orientation experience. Upon completion of this course, you will be able to: effectively navigate a Canvas course to access content and complete assignments (better community experience, create a career profile to introduce yourself to fellow classmates and the community, identify behaviors that align with WSOM academic and attendance policies, connect with WSOM community groups that align with your interests and needs, discover university resources to support your academic and well-being journey, apply the critical thinking framework to structure an approach to the case study learning method, prepare for class registration, configure your computer system with the necessary software for your program and fall courses, and complete onboarding activities before your arrival on campus for orientation.

MBAC 500. Probability, Statistics, and Quantitative Methods. 1.5 Unit. This 1.5 credit hour pass/fail course is designed to provide MBA students with all of the basic statistics and mathematics background material, as well as some experience with EXCEL and the statistics software package SPSS, that is needed in a number of their required core courses. Prereq: Full-time MBA program only.
MBAC 501A. Design Thinking in Management. 1 Unit.

How did LEGO rise from the brink of bankruptcy and rejuvenate a once fraying toy business? By seeking to more thoroughly understand the value of toys. How did the company conduct this pursuit? By observing children playing and then talking with them about what was seen. How did Samsung over the last decade become the world largest television manufacturer? By understanding the value of electronic screens. How did it gain new insights about them? By going to consumers' residences and observing how individuals and families (and other groups) use their televisions in their own home settings. These companies and many others, Amazon, Apple, Chick-fil-A, Geek Squad (before acquired by Best Buy), Netflix, and Starbucks, have embraced design as a business discipline responsible for identifying opportunities to create new value through the innovation of goods, services, and experiences. This course offers to equip you with basic design frameworks, methods, and tools to enhance the knowledge and skills gained in other courses and concentrations within Weatherhead's MBA program. Successful business leaders in the 21st century will need to possess a working knowledge of design as a part of their management acumen. Knowing how to think innovatively in the face of wickedly complex challenges, for one's business, organization, and industry, within the broader cultural milieu of customers "lives" will surely distinguish exemplary business leaders from lesser performers. Whether your career finds you serving within a multinational corporation or an entrepreneurial start-up, a governmental agency or non-profit enterprise, the ability to be innovative and creative upon demand will be a crucial skill. These seminar workshops aim to convince you that such is indeed are learnable skills, and to provide a foundation for further developing your design thinking over time. Prereq: Full time MBA student.

MBAC 501B. Professional Development and Career Strategy. .5 Unit. The Professional Development and Career Strategy course is designed to help MBA students prepare for the interview and job search process. Your LEAD course taken in the first semester of the first year will allow you to take a deeper dive and self-reflect on what you desire for your career and life, align your vision and values, and develop a plan. The Professional Development and Career Strategy course will support you in executing the career aspects of your plan and further develop those areas which you have discovered will prevent you from moving forward in obtaining the career you desire. Part A of the course will include four modules: Personal Brand and Positioning, Networking, Interview Skills, and Job Search Strategy. Prior to the start of the course, a one-on-one career readiness and career leader assessment, resume review and an intercultural training and communication session will take place so that during the fall semester you can focus on networking, enhancing interview skills and developing and executing your job search strategy. Throughout the course, students will focus on their career goals and objectives within the context of self to develop their positioning and value proposition statement, social media presence, supporting collateral, and an effective job search strategy. With a greater sense of self discovered in the LEAD course and your value proposition statement, you will be immersed in the interview process to gain an understanding of the various types of interviews (behavioral, case style and technical), the competencies being evaluated, how to prepare for each and develop competency through consistent practice and feedback. To measure improvement at the end of the year, a baseline assessment of your interview skills will be conducted by an industry professional. Executive presence and communication skills topics will be incorporated throughout the course to improve likelihood of success during the job search process and beyond. This course will be taught by the career development and placement teams and industry and alumni guest speakers to offer a real-world perspective. In addition to the course, you will have access to: 1. Leadership Coaching: Leadership Coaching is provided through the LEAD course. As you determine your direction and plan, you will have access to additional facilitated discussions to further explore/discover your options for your career and life. 2. Career Advising: Career advising is provided by the Career Development and Placement teams. You will receive practical guidance on the "how" to execute your career strategy. Prereq: Full time MBA Student.

MBAC 501C. Sustainable Value Innovation. 1 Unit.

The relationship between business and society, and the search for mutually beneficial advances between industry and the world's most pressing challenges, has become one of the defining issues of the 21st century. In every sector, immense entrepreneurial creativity is used to create a better world. Positive entrepreneurial energy is growing in direct proportion to the growing crises of our times. Industrial facilities and corporate buildings are being designed in ways that give back more clean energy than they use. Bottom-of-the-pyramid strategies and microenterprise models are helping to eradicate extreme poverty. Companies are designing supply chains that leave behind zero waste, only "wasteas-food" that becomes a cost-saving input for other industries. Powered by artificial intelligence, products and services are helping to solve social, health, and climate-related challenges. What research studies are documenting -including The Business of Building a Better World: The Leadership Revolution that is Changing Everything (Cooperrider and Selian, 2022. Berrett-Koehler), The Base of the Pyramid Promise (London, 2016. Stanford University Press), Embedded Sustainability: The Next Big Competitive Advantage (Laszlo and Zhexembayeva, 2011. Stanford University Press), Flourishing Enterprise (Laszlo et. al., 2014. Stanford University Press), Reimagining Capitalism in a World on Fire (Henderson, 2020. Public Affairs/Hachette)-is that, one-by-one, positive disruptions are erasing the false dichotomy embedded in "the great tradeoff illusion", the belief that firms must sacrifice financial performance if they choose to strategically address societal, environmental, and wellbeing challenges. It is in such a context that this MBA course explores one overarching proposition: that business, the motor of our society, has the opportunity to be the most positive and creative force on the planet, a force that contributes to the well-being of many as we transition to a sustainable world economy. Our search is for "business as an agent of world benefit": what does it look like, where is it happening, what are the market, societal and leadership enablers, and what are the business results and value propositions involved? And most important: how does this help each of you, as MBA students, to become leaders in the managerial, executive, and entrepreneurial roles you will occupy; ready to "win the future" and succeed in a marketplace where "doing well by doing good" is fast becoming the new normal. Prereq: Enrolled in Fulltime MBA program.

MBAC 501D. Professional Development and Career Strategy. .5 Unit. The Professional Development and Career Strategy course is designed to help MBA students prepare for their career post MBA. Your LEAD course taken in the first semester of the first year will allow you to take a deeper dive and self-reflect on what you desire for your career and life, align your vision and values, and develop a plan. The Professional Development and Career Strategy course will support you in executing the career aspects of your plan and further develop those areas which you have discovered will prevent you from moving forward in obtaining the career you desire. Part B of the course will focus on three modules including Interview Skills, Job Search Strategy (for Career) and Executive Presence and Communications. You will continue to refine your interview skills for behavioral, case style and technical interviews through consistent practice and feedback to advance your interviewing skills. This process will conclude with a year-end assessment of your progress conducted by an industry professional. Additionally, you will have an opportunity to refine your presentation skills as well as refresh your resume and job search strategy plan. The course will be taught by the career development and placement teams and industry and alumni guest speakers to offer a real-world perspective. In addition to the course, you will have access to: 1. Leadership Coaching: Leadership Coaching is provided through the LEAD course. As you determine your direction and plan, you will have access to additional facilitated discussions to further explore/discover your options for your career and life. 2. Career Advising: Career advising is provided by the Career Development and Placement teams. You will receive practical guidance on the "how" to execute your career strategy. Prereq: Full time MBA Student and MBAC 501B.

MBAC 502. Financial Accounting. 3 Units.

This course covers financial accounting: concepts, principles, and analyses. The major emphasis is development of an understanding of accounting information and reporting to enable you to be an effective manager. Although considerable importance is placed on the evaluation, interpretation, and analysis of accounting information for decision making: the fundamentals of accounting measurement and disclosure are also covered. Prereq: Full-time MBA program only.

MBAC 503. Managerial Accounting. 1.5 Unit.

This course focuses on managerial accounting. Upon completion of the course, students should be comfortable with the following: -understanding the basics of commonly used costing methods. creating and analyzing a budget. -analyzing departmental, divisional and corporate performance. -using data to make business decisions using managerial accounting techniques, and understanding the basic concepts of management decision analysis and the related vocabulary. Specifically, the course helps provide some answers to the following questions: -How is management accounting information prepared and reported, and how can it be understood and analyzed? -How can the analysis of management accounting and other data help management better understand the drivers of the company's financial performance, the strengths and weaknesses of the company's operations and management, and the risks and opportunities facing it? -How can the analysis of financial and other management information enable management to make the best decisions to address the risks and opportunities of its operations? The goal of this class is to move you from simply "doing the work and forgetting it" to helping you gain knowledge and a basic skill set that you will be able to apply to reallife opportunities. Prereq: Full-time MBA program and (MBAP 402 or MBAC 502).

MBAC 504. Corporate Finance I. 3 Units.

This is a MBA core finance course. In this course, students are introduced to the basics of corporate finance, including the objectives of and the decisions made by corporate financial managers. Topics covered include time value of money, stock and bond valuation, cost of capital, risk and return, investment decision rules, cash flows and free cash flows, cash flow projections and planning, and capital budgeting. Other topics may be covered from time to time. Prereq: Full-time MBA program only.

MBAC 505. Corporate Finance II. 1.5 Unit.

This is an MBA core finance course. The objective of the course is to strengthen students' conceptual understanding and problem-solving skills in corporate finance. Topics covered include cash flows and valuation, financial planning and ratio analysis, financing using internal and external sources including public offerings, capital budgeting and managerial options, capital structure, payout policy, working capital management, and financial planning and strategy. Topics could change from semester to semester. The course envisages use of case studies, excel spreadsheets, and simulation exercises. Prereq: MBAC 504.

MBAC 506. Marketing Management. 3 Units.

Through lecture, discussion, cases, projects and/or simulations you will learn theory and practice of how firms develop processes to understand, create and deliver "triple bottom line" value (i.e., economic, social and environmental) to business and/or consumer markets. Specifically in this course, we take the perspective that marketing is a process of creating value for firms, customers, and other stakeholders through mutually desirable exchanges. This is the foundation of a customer orientation and a central theme of market-driven management. Methods for strategic marketing planning, understanding buyer behavior, market analysis, segmentation and devising integrated marketing programs are introduced. Prereq: Full-time MBA program only.

MBAC 507. Operations and Supply Chain Management. 3 Units.

Operations and supply chain managers, ranging from supervisors to vice presidents, are concerned with the production of goods and services. More specifically, they are responsible for designing, running, controlling and improving the systems to deliver their goods or services timely and efficiently. This course is a broad-spectrum course with emphasis on techniques and information that are helpful to the practice of management in general and at any level. Through lectures, case discussions, and experiential learning in simulations and educational games, we will discuss commonly occurring application problems such as bottleneck identification, capacity planning, inventory control, bullwhip effect, supply chain design, etc. We will examine operations and supply chain management in a variety of contexts including manufacturing systems, financial companies, hospitals, start-ups, and apparel industries. Also we will explore the interface of operations and supply chain management with other functional areas such as marketing, finance, accounting, etc. This course is not oriented toward specialists in operations and supply chain management. Its goal is to introduce you to the basic concepts, to develop your business intuition about operations and supply chain management, to help you understand the day-to-day challenges in this area, and to provide you with the tools to address these challenges. Prereq: MBAC 511 and enrolled in Full-time MBA program.

MBAC 508A. Strategic Issues and Applications. 1.5 Unit.

Strategic management deals fundamentally with the ways firms build and sustain superior competitive positions and profitability. Successful strategy design and implementation requires an understanding of a firm's external environment, its internal resources and capabilities. It also requires an integrative view of the firm that spans functional areas such as operations, marketing and finance. Strategic analysis draws on a number of academic disciplines including economics, psychology, political and management science. Prereq: Full-time MBA program only.

MBAC 508B. Strategic Issues and its Applications II. 1.5 Unit.

The primary objectives of the course are for students to be able to: 1. Understand the nature of strategic competitiveness and develop the ability to analyze the competitive environment facing a firm, assess the attractiveness of the industry and isolate potential sources of competitive advantage which will aid in developing a positioning strategy for the firm 2. Develop a basic understanding of the organizational and administrative planning issues in implementing strategy. 3. Integrate knowledge and apply techniques from various disciplines, including finance, accounting, marketing and organizational behavior. The aim is to identify and analyze strategic issues and develop solutions in the form of actionable plans with the purpose of developing and sustaining competitive advantage. 4. Discriminate among the types of data that managers require in order to evaluate scenarios. Develop logical, coherent and persuasive analysis for a desired course of action. Consider how to effectively implement plans within the constraints imposed by the complex behavior of individuals within organizations. Students should be able to effectively communicate conclusions in both written and oral form. Prereq: MBAC 508A and enrolled in the full-time MBA program.

MBAC 511. Statistics and Decision Modeling. 3 Units.

This course provides the foundations of statistical and operations research methodologies for managerial decision-making. Topics covered include using sample data to (a) estimate quantities of interest and create confidence intervals, (b) perform hypothesis tests, and (c) make forecasts with simple and multiple regression. Decision modeling involves using mathematical models to provide a quantitative approach to analyzing and solving complex decision problems and includes an introduction to linear and integer programming models and applications, queuing models, and simulation models, all solved by appropriate computer software packages. Prereq or Coreq: MBAC 500. Prereq: Fulltime MBA program.

MBAC 512. Economics. 3 Units.

This course is designed to give you an overview and a basic understanding of modern economics. The course will cover the microeconomic topics of consumer choice, business decision making, and market equilibrium; as well as the macroeconomic topics of economic growth, inflation, interest rates, and exchange rates. In the process of achieving these specific content objectives, this course is taught in a way that will support the MBA program goals of having students become competent analysts and a critical, creative thinkers. Prereq: MBAC 511 and enrolled in Full-time MBA program. MBAC 515A. Leadership Assessment and Development. 1.5 Unit.

In today's increasingly complex and fast-paced environment, it is essential for you to know yourself well, to be able to develop your capabilities and to work effectively with a wide range of people. The objective of this course is to broaden and deepen your self-awareness and to prepare you to be an effective leader and life-long learner. The course is based on a model of self-directed learning and development. You will get to know yourself better through a series of experiential activities, assessment exercises, group discussions and discussions with a coach as well as classroom peers. The process we will follow in the course will help you to manage and lead effectively by discovering and articulating your values and vision, by assessing your leadership skills and abilities and in crafting meaningful learning plans to reach your personal and professional development objectives. Ultimately, this course is about developing the leader within you so that you are best positioned to lead and manage others. Prereq: Full-time MBA program only.

MBAC 515B. Leadership Assessment and Development. 1.5 Unit. In today's increasingly complex and fast-paced environment, it is essential for you to know yourself well, to be able to develop your capabilities and to work effectively with a wide range of people. The objective of this course is to broaden and deepen your self-awareness and to prepare you to be an effective leader and life-long learner. The course is based on a model of self-directed learning and development. You will get to know yourself better through a series of experiential activities, assessment exercises, group discussions and discussions with a coach as well as classroom peers. The process we will follow in the course will help you to manage and lead effectively by discovering and articulating your values and vision, by assessing your leadership skills and abilities and in crafting meaningful learning plans to reach your personal and professional development objectives. Ultimately, this course is about developing the leader within you so that you are best positioned to lead and manage others. 1) To be an effective leader of others, you must first know yourself well. 2) To be an effective leader, you must develop personal strategies for managing and navigating differences within your teams and broader organization. 3) You are here because you want to grow in your knowledge and abilities. 4) Treating each other with respect and kindness is essential for our learning community to thrive. 5) You learn best when you are aware of and have the opportunity to build upon your current capabilities. 6) An interactive and participative learning environment will help you to learn best. 7) Feedback is useful and important for your growth and development. Prereq: MBAC 515A.

MBAC 518. Business Analytics & AI for Business. 3 Units.

The course will provide an introduction to Business Analytics, with a special emphasis on AI, and specifically, Generative AI. The first part (about 40%) of the course will introduce certain canonical machine learning algorithm, an important part of AI, with Python using small business-related datasets. No knowledge of Python or programming will be assumed and the required codes and concepts will be taught together with the models. This part will be hands-on. The rest of the course will consist of two parts. One part of this will involve general discussion of the AI field talking about other flavors of AI useful for business and broader issues of ethics, societal implications and governance of AI (about 30%). This will be more of a survey with very little actual handson content. The second part of this content will focus on generative AI and once again be hands-on (about 30%). In this part, we will cover Large Language Models, prompting techniques and their business applications. Here students will learn basics of prompt engineering, good practices, exploratory data analysis using LLM tools, including generating Python codes for machine learning methods introduced earlier. We also discuss LLM applications in marketing and (at least) one other application area. Students will also do their own individual projects utilizing LLM in business context. Prereq: MBAC 511.

MBA Part Time Cohort (MBAP)

MBAP 400. Probability, Statistics, and Quantitative Methods. 1.5 Unit. This course is the no-cost, online program that helps students acquire and/or refresh the following probability, statistics, mathematics, and computer skills that are essential for success in the MBA program. Topics include: - Statistics: Descriptive Statistics (summarizing and explaining data). Probability (modelling randomness and variability using probability ideas). Sampling (mean, standard deviation, and the role of the Central Limit Theorem). -Algebra and Math: a self-guided review is provided of functions and their graphical representations, linear equations, and exponentials and logarithms. -Computer Skills: the basic use of SPSS and EXCEL for statistical analysis. This course is designed for incoming MBA students who have not taken a formal course in probability and statistics, have taken such a course long ago and need to refresh this knowledge, or are not confident with basic probability, statistics and mathematics. This course is a required prerequisite for the first-year Statistics course. It is also assumed that you have the knowledge of the material in MBAP 400 for the core courses (especially Finance, Marketing, and Accounting) and is not reviewed in any of those courses. Recommended Preparation: Knowledge of high school mathematics and the basics of using EXCEL (such as writing formulas, copying cells and formulas, and so on). Prereq: Students enrolled in the Part-time MBA or online MBA programs.

MBAP 400H. Probability, Statistics, and Quantitative Methods. 1.5 Unit. This course helps students squire and/or refresh the following probability, statistics, mathematics, and computer skills that are essential for effectives managers in a healthcare system. Topics include: Descriptive Statistics (summarizing and explaining data), Probability (modeling randomness and variability using probability ideas) Sampling (mean, standard deviation, and the role of the Central Limit Theorem), Linear equations and exponentials. Prereq: Students enrolled in the online MBA program.

MBAP 401. Leadership Assessment and Development. 3 Units.

This main objective of this course is to help students deepen their self-awareness and to prepare them to be effective leaders and lifelong learners. The course is based on a model of self-directed learning and development, which encourages students to discover and expand their emotional intelligence and leadership potential. Students are encouraged to reflect and learn through a series of activities, assessment exercises, and small and large group discussions. Students will complete a personal vision, receive 360-degree feedback on their emotional and social competence and create a personalized learning plan to guide their development throughout the MBA program. Leadership development coaches will meet with each student twice throughout the semester. Fundamentally, this course is about developing the leader within each person so that he or she can lead and manage others effectively. Prereq: Students enrolled in the Part-time MBA or online MBA programs.

MBAP 401H. Leadership Assessment and Development. 3 Units.

This main objective of this course is to help students deepen their self-awareness and to prepare them to be effective leaders and lifelong learners. The course is based on a model of self-directed learning and development, which encourages students to discover and expand their emotional intelligence and leadership potential. Students are encouraged to reflect and learn through a series of activities, assessment exercises, and small and large group discussions. Students will complete a personal vision, receive 360-degree feedback on their emotional and social competence and create a personalized learning plan to guide their development throughout the MBA program. Leadership development coaches will meet with each student during the semester. Fundamentally, this course is about developing the leader within each person so that he or she can lead and manage others effectively within a healthcare setting.

MBAP 402. Financial and Managerial Accountancy. 3 Units.

This course will cover the use and application of basic financial statements, the basic cost structures in a firm, and decision making using accounting information. We will discuss usage and analysis of information from the annual report, focusing on the balance sheet, income statement, cash flow statement and related notes. The course will also cover internally generated accounting information about the cost structure of the firm. We will discuss use of this information in decision making. You are expected to be comfortable with definitions of basic accounting terms, and you should be familiar with the accounting structure and the financial statements. Prereq: Students enrolled in the Part-time MBA or online MBA programs.

MBAP 402H. Accounting for Managers. 3 Units.

The course introduces graduate management students to accounting's role in business administration. Students learn that accounting is not math, truth, or putting numbers in to boxes. Instead, accounting is an imprecise language used to send and receive information about economic performance. Every language has its quirks, and accounting is no exception. Any communication problem that arises from use of English may reveal itself when one uses accounting. This course sensitizes students to common communication problems and suggests ways that they may be mitigated. A metaphor for the class is taking a one-semester introductory course in a foreign language. A semester's worth of study does not make one fluent. However, successful completion of the course allows motivated students, over the balance of their careers, to cultivate the ability to read, write, speak, and listen to that language. Time invested lays a foundation for accelerated learning. Highly motivated students eventually become fluent, while others are better able to use the language in everyday life

MBAP 403. Statistics and Decision Modeling. 3 Units.

This course provides the foundations of statistical and operations research methodologies for managerial decision-making. Business statistics focuses on statistical thinking as one of the fundamentals of effective management. Topics covered include sampling and the normal distribution, making inferences from data via confidence intervals and hypothesis tests, and analyzing relationships between samples. Decision modeling of organizational systems uses mathematical and computer models to provide a quantitative perspective on identifying, analyzing and solving complex decision problems. This course includes an introduction to linear programming models and applications, simulation techniques in decision-making, and project management. Prereq: MBAP 400 and enrolled in the Part-time MBA or online MBA programs.

MBAP 403H. Statistics and Decision Modeling. 3 Units.

The primary objective of this course, and a goal of the part-time MBA Program, is to make you a competent analyst by providing you with the ability to use, and to communicate with those who use, certain quantitative approaches to help make informed decisions for your organizations. A secondary objective is to provide you with the quantitative knowledge and skills that are needed in other MBA courses. The two groups of quantitative techniques are statistics and decision modeling. The objective of statistics is to summarize and present information contained in data sets, to draw conclusions about large populations based only on information obtained from samples, and, using these conclusions, to obtain reliable forecasts of quantities of interest. Among other things, statistical analysis provides many of the data needed in decision modeling. At the end of this part of the course you will be able to: 1) Summarize data sets using either graphical techniques (histograms, pie charts, and so on) or descriptive statistics (mean, median, standard deviation, and so on). 2) Use computer software to develop estimates and confidence intervals for means and proportions, and analyze the tradeoff between sample size and estimation risk. 3) Use sample data either to support or reject claims about a large population; understand the concepts and consequences of type-1 and type-2 errors. 4) Analyze relationships between two or more quantities of interest and use these relationships to make intelligent forecasts. Prereq: MBAP 400H and enrolled in the online MBA program.

MBAP 404. Managing People and Organizations. 3 Units.

Examines the behavioral sciences relevant to the effective management of people and the effective design of human resources system, structure and policies. Topics include leadership, change management, motivation and pay systems, team dynamics, staffing, decision making, organizational communications, employee participation, performance appraisal, conflict management, negotiation, work design, organizational design, and organizations culture. A variety of methods, including experiential and interactive learning methods, are used to study these topics. Prereq: Students enrolled in the Part-time MBA or online MBA programs.

MBAP 404H. Managing People and Organizations. 3 Units.

In today's increasingly complex and fast-paced environment, it is critical to understand how to maximize organizational performance. All organizations (corporations, non-profits, government) aim to achieve some goal or objective (e.g., increase shareholder value, make a profit, provide a service). People and systems are the vehicles by which an organization accomplishes its goals and objectives. This course is designed to enhance your ability to make well-reasoned decisions about human capital in organizations and to help you understand organizations as complex systems. Being able to apply systems thinking is critical in order to maximize individual, team and organizational performance.

MBAP 405. Financial Management I. 3 Units.

This is a Corporate Finance course that deals with investment theory and financial value. The course materials cover discounted cash flows, bond and stock valuation, capital budgeting, applications of real options in investment analysis, asset's risk and return, cost of capital, market efficiency and capital structure. The tools, problem solving techniques, and ways of thinking that you develop in this course have broad applicability to all areas of business. They also form the basis for sensible personal decisions in the areas of investments, borrowing, and financial planning. Prereq: Students enrolled in the Part-time MBA or online MBA programs.

MBAP 405H. Financial Management. 3 Units.

The purpose of this class is to introduce you to multiple concepts in Corporate Finance with the aim of providing principles and tools that enable you to make managerial decisions that increase the firm's value. The course will begin by building a foundation in understand the time value of money and its many applications, and then move on to various tools used to evaluate sound investment decision making. Students will also gain an understanding of how securities (different claims on the business) are evaluated and valued, including an in-depth treatment of risk vs. expected return, i.e., the notion that a more risky investment requires a higher expected return. We will then revisit corporate financial analysis first taught in financial accounting. The course will conclude with fundamental corporate valuation techniques. This portion of the class integrate topics learned earlier in the course, will build linkages to other courses (especially financial accounting) and reinforce what drives value as a manager within the enterprise. Prereg: Students enrolled in the online MBA program.

MBAP 406. Economics for Managers. 3 Units.

This course is designed to give you an overview and a basic understanding of modern economics. The course will cover the microeconomic topics of consumer choice, business decision making, and market equilibrium; as well as the macroeconomic topics of economic growth, inflation, interest rates, and exchange rates. In the process of achieving these specific content objectives, this course is taught in a way that will support the MBA program goals of having students become competent analysts and a critical, creative thinkers. Prereq: (MBAP 403 or MBAP 403H) and enrolled in the Part-time MBA or online MBA programs.

MBAP 406H. Economics for Managers. 3 Units.

This course offers an introduction to the theories, principles, and applications of microeconomics and macroeconomics. Topics include supply and demand, elasticity, market structure analysis, business cycles, taxation, and monetary policy. Prereq: MBAP 403 or MBAP 403H.

MBAP 407. Managerial Marketing. 3 Units.

Through lecture, discussion, cases, projects and/or simulations you will learn theory and practice of how firms develop processes to understand, create and deliver "triple bottom line" value (i.e., economic, social and environmental) to business and/or consumer markets. Specifically in this course, we take the perspective that marketing is a process of creating value for firms, customers, and other stakeholders through mutually desirable exchanges. This is the foundation of a customer orientation and a central theme of market-driven management. Methods for strategic marketing planning, understanding buyer behavior, market analysis, segmentation and devising integrated marketing programs are introduced. Prereq: Students enrolled in the Part-time MBA or online MBA programs.

MBAP 407H. Managerial Marketing. 3 Units.

This course will focus on Marketing Strategy in business organizations. We will use case studies and discussions as the primary mode of learning. To get the most out of this course, it is important that you come to class well prepared with your case analysis. The course objectives emphasize MBA program-level goals aimed at: 1. Creative and critical thinking and action in the face of ambiguity 2. Development and implementation of strategies to secure sustainable competitive advantage, and 3. Rigorous analytics

MBAP 408. Operations Management. 3 Units.

Operations management deals with the design of products and processes, the acquisition of resources, the conversion of inputs to outputs, and the distribution of goods and services. It is central to a firm's ability to compete effectively. As global competition in both goods and services increases, the management of operations is becoming more and more important. This course provides a broad overview of the managerial issues associated with production and delivery of goods and services. It includes the use of quantitative modeling using computers as a central methodology. Prereq: Students enrolled in the Part-time MBA or online MBA programs.

MBAP 408H. Operations and Supply Chain Management. 3 Units.

Operations managers, ranging from supervisors to vice presidents, are concerned with the production of goods and services. More specifically, they are responsible for designing, running, controlling and improving the systems that accomplish production. This course is a broad-spectrum course with emphasis on techniques and information that are helpful to the practice of management in general and at any level. We will discuss commonly occurring application problems such as capacity planning, production scheduling, line balancing, inventory control, guality management, just-in-time concepts, etc. The field of operations management was originally concerned with manufacturing systems. But many of the same ideas apply, and the same trade-offs are present, in service organizations like health care, insurance, hotel-management, airlines and government related operations. Several manufacturing and non-manufacturing environments will be discussed explicitly, and the emphasis will be on the fundamentals of the operations function in an organization. Also we will explore the interface of operations management with other functional areas such as marketing, finance, accounting, etc. This course is not oriented toward specialists in operations management. Its goal is to introduce you to the environments and help you appreciate the problems that operations managers are confronted with. Then, we will typically discuss some system specifics and emphasize the principles and issues that play key role in their management. Prereg: Students enrolled in the online MBA program.

MBAP 409. Sustainable Value Innovation. 3 Units.

This course creates a foundational platform featuring key models and managerial tools for building sustainable value and "turning the social and global issues of our day into business opportunities." Case studies of leading mainstream companies are used to analyze how business value is created for a range of social and environmental initiatives. Students will look at sustainability business strategies that reduce risks, drive down costs, create new revenue streams, serve new markets, and position companies to take advantage of changing societal expectations. Environmental issues such as climate change are covered along with social issues such as global poverty. Students acquire the competencies required to make effective business decisions based on integrating sustainability into the core of a company's value added activities. Prereq: This course is for students in the Part-time Cohort MBA Program.

MBAP 410. Strategic Issues and Applications. 3 Units.

This course helps students understand the nature of strategic competitiveness and helps them develop the ability to analyze the competitive environment facing any organization, assess the attractiveness of the industry or sector and isolate potential sources of competitive advantage which will aid in developing a positioning strategy for the organization.

MBAP 410H. Strategic Issues and Applications. 3 Units.

Strategic Management deals fundamentally with the ways firms build and sustain superior competitive positions and profitability. Successful strategy design and implementation requires an understanding of a firm's external environment, its internal resources and capabilities. It also requires an integrative view of the firm that spans functional areas such as operations, marketing and finance. Strategic analysis draws on a number of academic disciplines including economics, psychology, political and management science.

MBAP 411. Identifying Design Opportunities. 3 Units.

Designing is giving form to an idea for a more desirable product, service, process or organization, and refining the idea into something that can be delivered reliably and efficiently. Good design integrates these evolving ideas with the day-to-day realities of a firms' operations, systems, marketing, economics, finance and human resources. Designing is thus a unique managerial activity that brings together changing technologies, capabilities, relationships, activities and materials to shape an organization's plans and strategies. It combines analysis and synthesis to create opportunities for improvement and means of attaining them. Viewed this way, designing is a core competence of a successful entrepreneur or innovative leader. Design analysis is the systematic review of the four orders of design found in every firm--namely, the firm's communications, products, interactions and environments--and the creation of opportunities to increase firm value by improving each. Students will identify ill-defined, ill-structured problems within organizations. Such problems are ones for which there are no definitive formulations and for which the formulation chosen affects the solutions available. For such problems, there is no explicit way of knowing when you have reached a solution, and solutions cannot necessarily be considered correct or incorrect. But finding innovative solutions to such problems can provide unique opportunities to create exceptional value. A major outcome of the semester's inquiry is a presentation of the design problem and proposed design solution. Prereg: This course is for students in the Part-time Cohort MBA Program.

MBAP 420H. Regulatory Issues in Healthcare Management. 1.5 Unit. This course provides and overview of key areas health law at level important to managers in healthcare related organizations. The topical areas covered include (1) the history, structure, financing, and operation of the U.S. medical system; (2) legal and ethical rules and regulations governing physicians and other health care professionals; the patientphysician relationship; institutional providers of care such as hospitals, nursing homes, and laboratories; and drug and device manufacturers; (3) regulation of health insurers and managed care organization; (4) medical malpractice law; (5) confidentiality and electronic medical records; (6) fraud and abuse; (7) antitrust law; (8) employer health plans; (9) medical research; and (10) public health.

MBAP 421H. Organizational Culture in Healthcare Management. 1.5 Unit.

In this residency course, students will analyze corporate culture using the Burke-Litwin model. Culture in relation to other factors of organizational functioning and change. Prior to the on campus residency students will be introduced to factors that influence organizational culture such the external environment, vision & mission, leadership style, organizational structure, systems (HR such as recruiting and reward and IT such as administrative records keeping), management practices & climate, and power, politics and influence. During the on campus residency, students will visit two major hospital systems to examine how culture influences operational decision making. Prereq: Students enrolled in the online MBA program.

MBAP 422H. Digital Innovation in Healthcare. 1.5 Unit.

In this course, students will learn the role of digital technology in creating new digitally enabled services in the healthcare market. Industry experts will be engaged throughout the course to provide the latest information on developments and application being used.

MBAP 423H. Engineering in Healthcare Management. 1.5 Unit.

The course focuses on the creation, funding, and management of digital health, biotech, medtech, and other health services enterprises. The course is will focus on special issues surrounding the conceptualization, planning, diligence, and capitalization of these ventures and also includes management and compensation practices. In addition, course offers methods for self-assessment & development of business models and plans, techniques for technology assessment and strategy, develops foundation for capitalization and partnering strategies, and creates a basis for best practices in company launch and plan execution.

MBAP 424H. Economic Issues and Applications in Healthcare. 1.5 Unit.

The purpose of this course is to develop the analytical skills necessary for understanding how the U.S. health care sector operates, how it has evolved, the forces at work behind perceived deficiencies (in quality and cost control), and the impact of alternative policy proposals. Special attention is giving to recent developments in the healthcare marketplace, and the strategic considerations they create for providers and insurers. These issues are addressed through the lens of microeconomic theory. Under this framework, outcomes result from the interaction of decisions made by participants in the healthcare economy (e.g. patients, providers, insurers, government), with those decisions governed by the preferences, incentives and resource constraints facing each decision-maker. Principles of microeconomics will be reviewed as necessary to ensure consistent understanding of basic concepts. The course is designed to appeal to a broad audience, particularly students interested in healthcare management, public health, medical innovation, health law, and public policymaking. Prereq: MBAP 406 or MBAP 406H.

MBAP 425H. Action Learning in Healthcare. 3 Units.

In this residency based course students will have an opportunity to apply their learning to real world projects in collaboration with a major hospital system in the Cleveland area. Students will learn how to conduct an action research project including problem identification, stakeholder engagement, needs assessment, intervention design, data collection, data analysis, and the presentation of recommendations/findings. Prereq: Students enrolled in the online MBA program.

MBAP 426H. Finance Issues and Applications in Healthcare. 1.5 Unit.

Exploration of economic, medical, financial and payment factors in the U.S. healthcare system sets the framework for the study of decisions by providers, insurers, and purchasers in this course. The mix of students from various programs and professions allows wide discussion from multiple viewpoints. Prereq: MBAP 405 or MBAP 405H.

MBAP 427H. Introduction to Population Health. 1.5 Unit.

This course ntroduces graduate students to the multiple determinants of health including the social, economic and physical environment, health services, individual behavior, genetics and their interactions. It aims to provide students with the broad understanding of the research development and design for studying population health, the prevention and intervention strategies for improving population health and the disparities that exist in morbidity, mortality, functional and quality of life. Format is primarily group discussion around current readings in the field.

MBAP 428H. Healthcare Decision Making and Analytics. 3 Units.

This course is designed to introduce the students to a wide range of methods and applications of decision science and analytics in healthcare management and medical decision making. The primary objective of the course is to provide the students with the necessary technical knowledge and skills to understand mathematical and statistical models used in health decision making. Further, the course aims to provide the students with hands-on experience required to leverage such methods for evaluating clinical interventions, choosing the best treatment, and informing public health policy. Course topics include decision trees, Markov decision models, Monte Carlo simulation, cost-effectiveness analysis, sensitivity analysis, utility theory, bootstrapping and subgroup analysis, prediction and classification methods, and using computer software to build and analyze health decision analysis models. Prereq: MBAP 403 or MBAP 403H.

MBAP 429H. Artificial Intelligence Applications in Healthcare Management. 1.5 Unit.

Artificial intelligence (AI) is a set of methods and algorithms that enable computers to mimic human behavior. Deep learning is a subfield of machine learning that builds large neural networks to extract subtle patterns from data and is currently the state-of-the-art method of achieving artificial intelligence. Healthcare is undoubtedly one of the most promising and influential application areas of AI. The unprecedented increase in data availability and computer power over the past decade has enabled neural network models to parse massive clinical datasets, learn incredibly subtle patterns, and in some cases, augment clinicians' performance. This course covers the basic concepts and theoretical foundations of deep learning as they relate to healthcare management. We will discuss several successful applications of AI in healthcare as well as opportunities for AI across a variety of healthcare contexts. Limitations, challenges, key debates, and considerations surrounding AI models and their adoption in healthcare will also be highlighted. Prereg: MBAP 403H or MBAP 403.

MBAP 430H. Lean Six Sigma in Healthcare. 1.5 Unit.

The course will include the following topics: 1) Service Process Blueprints, 2) Managing Capacity in Service Systems, 3) Mapping the Value Stream (current and future state), and 4) Inventory Management in Service Systems. The topics considered are viewed in the context of healthcare management, financial services, insurance firms, call centers, back-office operations, and other applications. Through these topics, the participants will be trained in tools that help them understand customers' expectations and needs and to identify service system characteristics that can meet these needs. We will learn how to identify errors in service and troubleshoot these problems by identifying the root causes of errors. Subsequently, we will discuss how one can modify the product or service design so as to prevent defects from occurring. Finally, we will establish performance metrics that help evaluate the effectiveness of the Lean system in place. These efforts will result to improved quality. This course is not oriented toward specialists in service management. Its goal is to introduce you to the environments and help you appreciate the problems that operations managers are confronted with. Then, we will typically discuss some system specifics and emphasize the principles and issues that play key roles in their management. Prereq: MBAP 408 or MBAP 408H.

MBAP 431H. Empowering Healthcare Innovation: Frameworks for Real-World Impact. 3 Units.

While theory has much to say about what the ingredients of good leadership looks like and has provided leaders with a range of tools to manage change processes, the challenge of putting those ingredients together to drive large-scale change requires its own set of skills and knowledge. This is particularly true in healthcare, where -- due to escalating costs and mediocre outcomes, experts around the country have been pushing for transformational change for nearly two decades with little success. This course addresses the leadership challenge of leading large-scale transformational change by presenting a specific framework -- believing, belonging and building -- that will help students apply principles of resonant and adaptive leadership in real-world settings. It will then seek to help integrate a set of change management tools -- including the Objectives and Key Results Framework -- that are necessary to ensure alignment, shared accountability and ensure that teams are able to implement and measure what matters most. Developing and honing the skills necessary to lead transformation change requires years of practice, but at the end of this course, students should leave with a clear framework for leading that work and a strong sense of how to apply that framework in real world settings. Prereq: Enrolled in the online MBA in Healthcare Management.

MBAP 450P. Foundations of Product Management. 1.5 Unit.

The growth and continued success of companies depend on their ability to manage the lifecycle of their products effectively and comprehensively -- from ideation, design and launch to scaling, growth, and evolution. Product managers are critical players in this -- they own the product vision (from cradle to grave), craft the product roadmap, strategize and lead product development and growth initiatives, and serve as the connective tissue between the company, its partners, and the market. More broadly, product managers champion and evangelize for their products, with both internal and external stakeholders. This course will serve as the introduction to the Product Management track in the Online MBA degree. As such, the focus will be on providing a broad overview of the product management function as well as the roles and responsibilities of a product manager. We will examine some of the key concepts and frameworks that underlie product visioning and product strategy, product road mapping, product design and development, product marketing, and product growth management, and product ecosystem leadership. We will also consider leadership, communication, negotiation, problem-solving and decision-making skills that product managers need to be effective in their role. Artificial intelligence has become an important tool in product management. We will consider some of the emerging applications of AI in product management and the associated risks and benefits. In discussing the different topics in this course, we will draw on examples and case studies from a wide range of industries and markets -- for example, digital and non-digital products, B2C and B2B products, and regional/national and global markets.

MBAP 451P. Product Strategy & Leadership. 1.5 Unit.

A critical job of any product manager is to provide leadership to the extended product team. This involves crafting a product vision, developing an associated product strategy, and aligning the product team to execute on that strategy. This course will focus on these key elements of a product manager's role. We will also emphasize the need for product managers to bring together diverse functional experts -- engineering, design, marketing, etc. -- and resolve conflicts that may emerge from their differing perspectives and roles in the organization. Increasingly, product managers' leadership also needs to external partners and the broader ecosystem that is critical for the product success.

MBAP 452P. Product Discovery, Analytics, & Customer Insights. 1.5 Unit. In the product development journey, the first (and the most important) step is product discovery, i.e., acquiring a clear understanding of a

product opportunity. This requires product managers to not just identify the potential customer (market) but also derive non-obvious insights on customer needs or the 'job-to-be-done'. Such insights could then be used to build a first-level product concept that matches with the market opportunity. This course will focus on key frameworks and techniques that product managers (and product development teams) can employ to (a) analyze and define the broad market problem, (b) conduct an in-depth customer needs analysis, and (c) formulate and test an initial product concept. The course will emphasize a diverse range of data sources to study customer needs -- from qualitative techniques to quantitative techniques. For example, social media and other digital platforms form an important venue to gather and analyze data on customer desires, behaviors, and needs. Similarly, analysis of user behaviors on existing products (product analytics) forms another important vehicle to acquire insights on future customer needs. Thus, in this course, we will consider how different data analytic techniques (relating to both small data and big data) afford deriving rich insights on customer behaviors and needs and how such insights could be converted into an effective product concept.

MBAP 453P. Business Model Design. 1.5 Unit.

Designing and articulating a unique value proposition (VP) forms a critical task for the product team. In this course, we will use a business model framework to examine the key elements of a product's value proposition and their interrelationships -- and the implications for both value creation and value capture. While Product Discovery provides the product team with a deeper understanding of the customers' problem (or pain points), to address it they have to come up with a unique value proposition as well as the resources, activities, and relationships needed to realize it in the marketplace. Using tools such as business model canvas, we will examine how a product team can answer the 'what' and the 'how' questions related to addressing a market opportunity. We will also examine how the product team can validate the VP and the associated business model. The course will emphasize digital platforms and digital components as key parts of the business model. We will identify and discuss different types of digital business models and the important underlying concepts such as disintermediation, network effects, and data-based learning that shape their success. We will also discuss how the adaptability, malleability and portability of a digital business model allows a firm to be more responsive to market dynamics as well as pursue faster internationalization of the underlying business.

MBAP 454P. Product Management in Startups. 1.5 Unit.

Often, the context for product management is a new venture or startup. As such, product managers need to have a foundational understanding of their role in the venturing context and the product management processes therein. This course will focus on providing such an understanding. Specifically, we will consider the key activities that comprise the entrepreneurial journey – from how entrepreneurial opportunities are formed/shaped to how a business model is crafted and executed. We will also consider some of the key issues and challenges that product managers working in a startup will face and the skill set they will need to address those challenges. The first residency of the Product Management program will be part of this course. The 3.5-day residency will be the first opportunity for the students to meet with each other and tour the Case campus. In addition to networking events and guest speaker talks, the residency will also include site visit to startups and other entrepreneurial entities (e.g., incubators) in Cleveland.

MBAP 455P. Product Architecture and UX Design. 1.5 Unit.

The success of a product is critically shaped by its ability to attract users by its features that address visible and latent user needs and how smooth and effective the users' interactions are the product. A product needs to address cognitively the tasks it is supposed to support, be easy to use and learn, intuitive and aesthetically pleasing. Product managers also need to understand how product architecture can be designed so as to be responsive to market changes (customer needs) and at the same time offer superior capabilities and features. This course will serve as the introduction to product architecture and interface design and discuss related design principles and techniques. We will draw on ideas and concepts from a wide range of contexts including industrial design, software design, and service design. The focus will be on providing a broad overview of the product design functions and related interfaces as well as the roles and responsibilities of a product manager in this. We will examine key frameworks and principles that underlie product architecture design, product interaction design, cognitive aspects of design, user experience design and approaches that help develop and evaluate user's interactions with the products as part of the design process.

MBAP 456P. Product Development & Delivery. 1.5 Unit.

The success of product development depends on product manager's ability to engage with and learn from diverse types of stakeholders (including customers and end users) during the development process and to integrate that knowledge in converting evolving product ideas into tangible features and capabilities. At the same time, the PM needs to execute the product development process efficiently so that the product is delivered in time, cost, and quality. These two are in many situations in tension and product manager's role is to successfully manage this tension so as to deliver a viable product. This course will serve as the introduction to contemporary product development processes called commonly as agile development. We will discuss the idea and motivation for agile development, key agile development principles, and associated techniques. We will focus on providing a broad overview of the roles and responsibilities of different developer and user categories as part of the agile development to cater for how such features can be developed as part of the product design process. We will also examine principles agile organization and management, project management principles, and approaches that help product managers evaluate development processes and related outcomes.

MBAP 457P. Building AI-based Products. 1.5 Unit.

As Artificial Intelligence (AI) technologies become more ubiquitous in products and services across industries – in both industrial and consumer settings – product teams will be required to understand the unique aspects of the design and development of AI-based products including the fundamentals of machine/deep learning algorithms and large language models. This course will start with an overview of AI technologies and their varied applications in different industries. The course will then focus on the different stages of the building of AI-based products including the selection of appropriate AI technologies and the technical and operational requirements to build AI models. We will also consider the design of intelligent human-machine interfaces in different organizational settings including customer service. The course will also focus on the varied risks associated with AI products – at individual, firm and societal levels – and the strategies that product teams can adopt to mitigate them.

MBAP 458P. Sustainable Product Management. 1.5 Unit.

This course covers the theory and practice of Sustainable Product Management (SPM) – why it is becoming a priority for businesses in every sector, what leading companies are doing about it, and how they are doing it. Global issues such as climate change, inequality, and DE&I to concerns about privacy and cybersecurity are introducing greater levels of complexity into business strategy and operations, with far-reaching implications for how products are designed, developed, produced, and scaled. Effective handling of these issues can lead to new sources of revenue generation and resource productivity, as well as reputational value, while failure to do so can lead to financial and competitive risk.

MBAP 459P. Digital Marketing & Customer Analytics. 1.5 Unit.

Digital marketing and customer analytics is foundational to marketing insight in the digital era because it is the language used to optimize and connect results across all digital marketing tactics (search, social media, email, display, video, etc.). An effective digital marketing analyst is a vital data translator for a business. The cultivation of both technical and soft skills is important in product management and, these skills are taught through this course. The course material will be taught within a discussion-based, experiential learning environment. Various aspects of digital marketing analytics will be covered with clear examples. Students will develop skills in translating strategic questions of firms into actionable data analysis using different kinds of data.

MBAP 460P. Managing Product Growth. 1.5 Unit.

The product management function does not end with the development and launch of a new product. It is critical for a product manager to ensure that the product (a) scales and grows profitably (in terms of volume and market reach) and (b) evolves to address changing market conditions. This course will focus on the post-launch activities in product lifecycle management -- scaling, growth, evolution, and sunsetting. We will start with product scaling and consider how product scaling strategies may vary for digital and non-digital products. We will also examine platformbased strategies for product scaling. Following that we will focus on diverse types of strategies for driving product growth -- for example, from the niche to the masses, from domestic to international, and from product to platform. We will then consider product evolution strategies -- how to 'read' changing market trends and develop plans to transform existing products to stay relevant for the future. In some instances, such assessments may reveal the need for sunsetting the product. The broader focus of the course will be on imparting a deep understanding of the product manager's role in ensuring product growth and profitability as well as its continued relevance vis-a-vis changing markets.

MBAP 461P. Experiential Project in Product Management I. 1.5 Unit. Students must gain hands-on experience in various aspects of product management. The objective of these two project-based courses (1.5 credits each) is to offer a venue for students to engage with real-world problems in product management and to develop approaches to address them. Note that the nature of the projects would vary -- for example, while some projects may involve identifying and assessing new product opportunities or designing and developing new products, others may involve developing feasible pathways to enhance the growth of existing products. The projects will be sponsored by a wide range of companies (from across industries and geographies). Instructors will help student teams pick projects that fit with their career goals so as to enhance the long-term value they derive from the project work. It is expected that student teams will require 14 weeks to complete a project (i.e., they will continue their work across the two courses/two semesters). However, at the end of each course, students will get an opportunity to present their work and engage with the sponsors. Also, there will be a residency associated with the second course. Specifically, toward the end of the second course, students will visit the campus for a 3-day residency. They will present their final project recommendations to the sponsors and engage with them on broader range of PM-related topics. Additionally, the residency will also include a networking event involving all sponsor companies, guest speakers, and other senior executives from regional companies. The synchronous online class meetings (across the 14 weeks of the two courses) will be structured with dual purposes. First, it will allow for periodic reporting by student teams on their project work. Second, we will use some of the class meetings to host guest speakers to focus on specific product management -related topics that are not covered in the rest of the curriculum.

MBAP 462P. Experiential Learning in Product Management II. 1.5 Unit. Students must gain hands-on experience in various aspects of product management. The objective of these two project-based courses (1.5 credits each) is to offer a venue for students to engage with real-world problems in product management and to develop approaches to address them. Note that the nature of the projects would vary -- for example, while some projects may involve identifying and assessing new product opportunities or designing and developing new products, others may involve developing feasible pathways to enhance the growth of existing products. The projects will be sponsored by a wide range of companies (from across industries and geographies). Instructors will help student teams pick projects that fit with their career goals so as to enhance the long-term value they derive from the project work. It is expected that student teams will require 14 weeks to complete a project (i.e., they will continue their work across the two courses/two semesters). However, at the end of each course, students will get an opportunity to present their work and engage with the sponsors. Also, there will be a residency associated with the second course. Specifically, toward the end of the second course, students will visit the campus for a 3-day residency. They will present their final project recommendations to the sponsors and engage with them on broader range of PM-related topics. Additionally, the residency will also include a networking event involving all sponsor companies, guest speakers, and other senior executives from regional companies. The synchronous online class meetings (across the 14 weeks of the two courses) will be structured with dual purposes. First, it will allow for periodic reporting by student teams on their project work. Second, we will use some of the class meetings to host guest speakers to focus on specific product management -related topics that are not covered in the rest of the curriculum.

MBAP 470. Leading Self. 1.5 Unit.

Leading Self is a dynamic and transformative course designed to help you unlock your full potential to become the leader you aspire to be. This course is a journey of self-discovery and growth. We'll delve into decades of research on what makes superior performing managers effective, and learn how to apply theories of how adults learn and change to inspire "sticky" change – growth and development that truly endures.

MBAP 471. Probability and Statistics for Decision Modeling. 1.5 Unit. This course will help you unlock the strategic power of analytics that will set you apart in the competitive business landscape. This isn't just a statistics class; it's your launchpad to becoming a truly datadriven leader. Imagine commanding insights as you master the art of summarizing complex data sets, using dynamic graphical techniques (like histograms and pie charts) and precise descriptive statistics (such as mean, median, and standard deviation) to unearth compelling insights that drive smart business changes. You'll master precision forecasting by leveraging industry standard computer software like EXCEL (with its powerful Analysis Toolpak add-in) and JMP to develop robust estimates and confidence intervals for population means and proportions. Beyond the numbers, you'll gain the essential skill of effectively communicating complex statistical analyses, empowering you to articulate your findings with clarity and impact, influencing stakeholders and driving organizational success Prereg: Enrolled in Part-time MBA program, Online MBA program, or Product Management and Leadership Nondegree program.

MBAP 472. Regression and Decision Modeling. 1.5 Unit.

This course will help hone your analytical skills and prepare you for impactful data-driven leadership. This isn't just about crunching numbers; it's about mastering the art of strategic problem-solving and effectively communicating complex quantitative insights in the business world. You'll gain the critical skills to forecast with confidence, diving deep into regression models to analyze relationships between multiple quantities of interest and accurately predict future outcomes. You'll build, test, and apply these models, understanding how they solve real-world organizational challenges and how to interpret their results for any audience. Furthermore, you'll achieve strategic decision optimization, gaining mastery in decision modeling, a powerful approach for constructing and analyzing mathematical models across diverse business problems. Drawing applications from manufacturing, transportation, marketing, and finance, you'll develop quantitative models, utilize computer software to find solutions, and interpret these results within their real-world context. Prereq or Coreq: MBAP 471.

MBAP 473. Fundamentals of Artificial Intelligence for Management. 1.5 Unit.

This course is designed for professionals who want to harness the transformative power of artificial intelligence (AI) in business. It blends foundational understanding with real-world applications, equipping participants to lead AI initiatives and drive innovation across industries. Delivered in a hybrid format, the course combines asynchronous online learning with hands-on, in-person workshops. The asynchronous modules introduce core concepts-such as the history of AI, key technologies, and types of AI systems--while also exploring how AI is used across functions like marketing, finance, operations, R&D, and strategic decision-making. Each module focuses on one area of business application, supported by curated case studies and insights into emerging tools. In-person sessions are built around collaborative, guided discussions. These workshops deepen understanding through real-world case analysis, peer exchange, and scenario-based activities that help learners translate knowledge into actionable insights.

MBAP 474. Leading Others. 1.5 Unit.

Groups and teams are ubiquitous in our daily lives. They help us find solutions, achieve goals, and create opportunities. Often, however, little attention is paid to understanding how teams function and how we can promote team effectiveness. This course integrates theory and practice to improve your conceptual understanding of teams and your ability to intervene in teams as a team member, team leader, and/or team consultant. We will explore questions such as: How do teams develop over time? What makes a team effective? What behaviors promote psychological safety? And other team topics of interest to you. Prereq: MBAP 470 and MBAP 499.

MBAP 475. Using Financial Statements to Evaluate Performance. 1.5 Unit.

Prepare to unlock the secrets hidden within an organization's financial story! This is a dynamic course designed to transform your understanding of financial statements and empower you to assess organizational health and drive success. This course goes beyond the numbers, teaching you the language of financial performance and equipping you with the skills to diagnose strengths and weaknesses. You'll gain a deep appreciation for how business transactions shape financial statements and learn to critically evaluate the strengths and limitations of financial reporting. By the end of this course, you'll recognize that accounting is an imprecise, yet indispensable, communication and measurement tool. You'll master how common business transactions impact financial statements, analyze the three primary financial statements to evaluate organizational performance, and understand how different stakeholders leverage this vital information.

MBAP 476. Cost-Based Decision Making. 1.5 Unit.

In this course, you'll dive deep into the world of managerial accounting, learning to transform raw numbers into actionable insights that drive success. This isn't just about crunching numbers; it's about mastering the language of business and using it to make informed, impactful decisions. You'll gain a working knowledge of essential costing methods, master budgeting and performance analysis, and leverage cost-volumeprofit analysis to make critical business choices. You'll be prepared to analyze departmental, divisional, and corporate performance, and effectively communicate your findings to others.

MBAP 477. Corporate Finance. 1.5 Unit.

Whether your path leads to a specialized finance role or not, this course will empower you with critical skills for informed decision-making. In this dynamic course, you'll go beyond the numbers to grasp the true power of finance. We'll explore core concepts like present value and master capital budgeting techniques to equip you for impactful decision-making. Dive deep into financial statement analysis and uncover the strategic implications of financial leverage. You'll hone your spreadsheet skills as we tackle real-world financial challenges. Collaborate in teams on challenging group assignments and keep your finger on the pulse of global financial news through individual article discussions. This course is your opportunity to build a robust financial toolkit, ensuring you're ready to lead with confidence in any business environment. This isn't just theory; it's practical knowledge that directly prepares you for our advanced "Valuing Businesses." Prereq: MBAP 471 and MBAP 472.

MBAP 478. Valuing Businesses. 1.5 Unit.

In this course, you'll delve deep into the essential tools and strategies used by finance professionals and corporate leaders to assess the true worth of companies and stocks. This dynamic course goes beyond theory, focusing on practical applications of discounted cash flow (DCF) and relative valuation approaches -- the cornerstones of real-world business valuation. You'll also gain a sophisticated understanding of risk and reward, equipping you to confidently navigate equity markets and anticipate expected returns across diverse industries. Prepare to hone your analytical prowess with extensive spreadsheet work, a critical skill for any finance professional. This isn't just about numbers; it's about making informed, impactful financial decisions. Prereq: MBAP 477.

MBAP 479. Leading Organizations. 1.5 Unit.

In today's complex fast-paced environment, it's critical to be able to optimize organizational performance. All healthcare organizations (corporations, non-profits, government) aim to achieve some goal or objective (e.g., increase shareholder value, meet patient needs, create value for stakeholders, make a positive social impact). This course is designed to enhance your ability to make well-reasoned decisions about managing people and organizations. Being able to apply systems thinking is critical to optimizing individual, team, and organizational performance and wellbeing.

MBAP 480. Introduction to Business Strategy. 1.5 Unit.

This Business Strategy Development course delves into the fundamental principles of Strategic Management, exploring how firms establish and maintain superior competitive positions and profitability. You will gain a deep understanding of the critical interplay between a firm's external environment and its internal resources and capabilities, recognizing that successful strategy design requires an integrative perspective across functional areas like operations, marketing, and finance. Drawing upon insights from economics, psychology, political science, and management science, you will develop the analytical skills to assess market dynamics, evaluate organizational strengths and weaknesses, and ultimately formulate and implement effective strategies for sustained success in today's complex business world.

MBAP 481. Marketing Planning and Management. 1.5 Unit.

Marketing Planning and Management isn't just about learning marketingit's about learning how to think like a marketer. This course gives you the strategic edge by diving deep into the core pillars of marketing success: segmentation, targeting, positioning, and the marketing mix. You'll discover how to craft compelling marketing plans that actually drive business results, sharpen your decision-making with customer and competitive intelligence, and design marketing programs that connect strategy to execution. Whether you're aiming to lead a brand, launch a product, or build a growth-focused team, this course equips you with the mindset, tools, and confidence to make marketing matter.

MBAP 482. Introduction to Supply Chain Management. 1.5 Unit.

Operations managers, ranging from supervisors to vice presidents, are concerned with the production of goods and services. More specifically, they are responsible for designing, running, controlling and improving the systems that accomplish production. This course is a broad-spectrum course with emphasis on techniques and information that are helpful to the practice of management in general and at any level. We will discuss commonly occurring application problems such as inventory control, distribution logistics, production scheduling, push/pull systems, justin-time concepts, quality management, etc. The field of operations management was originally concerned with manufacturing systems. But many of the same ideas apply, and the same trade-offs are present, in service organizations like health care, insurance, hotel-management, airlines and government related operations. Several manufacturing and non-manufacturing environments will be discussed explicitly, and the emphasis will be on the fundamentals of the operations function in an organization. Also we will explore the interface of operations management with other functional areas such as marketing, finance, accounting, etc. This course is not oriented toward specialists in operations management. Its goal is to introduce you to supply chains and help you appreciate the problems that operations managers are confronted with. Then, we will typically discuss some system specifics and emphasize the principles and issues that play key role in their management.

MBAP 483. The Strategic Edge - Economics for Leaders. 1.5 Unit.

Economics is the foundation of business analysis. It is the study of choices that economic agents make as they cope with scarcity and the incentives that influence those choices. Economic analysis is built on rigorous theories and methods designed to investigate causal relationships. Broadly, economics is divided into microeconomics, focusing on the actions of individual agents within the economy, and macroeconomics, focusing on the economy as a whole. This course offers an introduction to the theories, principles, and applications of microeconomics and macroeconomics. Microeconomics topics include supply and demand, market failures, theory of the firm, market structure, pricing strategies, strategic decision-making, and decision-making under uncertainty.

MBAP 484. Introduction to Operations Management. 1.5 Unit.

Operations managers, ranging from supervisors to vice presidents, are concerned with the production of goods and services. More specifically, they are responsible for designing, running, controlling and improving the systems that accomplish production. This course is a broad-spectrum course with emphasis on techniques and information that are helpful to the practice of management in general and at any level. We will discuss commonly occurring application problems such as process analysis, lean systems, capacity planning, etc. The field of operations management was originally concerned with manufacturing systems. But many of the same ideas apply, and the same trade-offs are present, in service organizations like health care, insurance, hotel-management, airlines and government related operations. Several manufacturing and non-manufacturing environments will be discussed explicitly, and the emphasis will be on the fundamentals of the operations function in an organization. Also we will explore the interface of operations management with other functional areas such as marketing, finance, accounting, etc. This course is not oriented toward specialists in operations management. Its goal is to introduce you to the environments and help you appreciate the problems that operations managers are confronted with. Then, we will typically discuss some system specifics and emphasize the principles and issues that play key role in their management.

MBAP 485. Business Strategy Applications. 1.5 Unit.

This course provides a practical lens on implementing business strategy by exploring the challenges and decisions organizations face in competitive markets. You will analyze how firms establish advantages in dynamic industries, understanding key success factors and the forces that shape market leadership. The course examines the crucial role of innovation and evolving business models in creating and maintaining a competitive edge. You will also investigate how strategic decisions extend to the corporate level, including choices around vertical integration and diversification. Finally, you will delve into the complexities of strategic planning within large organizations and the considerations for expanding into international markets, evaluating different approaches to global growth. By the end of this course, you will gain a strong understanding of the strategic actions and organizational adjustments needed to effectively implement and adapt business strategies across various competitive landscapes. Prereq: MBAP 480.

MBAP 486. Mastering Prompt Engineering: Unlock the Power of AI for Business Advantage. 1.5 Unit.

In today's rapidly evolving business landscape, the ability to effectively interact with Artificial Intelligence isn't just a technical skill -- it's a strategic imperative. "Mastering Prompt Engineering" is your gateway to becoming a savvy AI navigator, efficiently transforming complex business challenges into actionable insights and innovative solutions. This dynamic, hybrid course goes beyond surface-level AI interaction. You'll dive deep into the art and science of crafting precise prompts, learning to elicit specific, valuable outputs from powerful AI models. From accelerating market analysis and generating breakthrough ideas to quickly refining compelling communications and informing critical strategic decisions, you'll discover how to leverage AI as your ultimate business partner. Prereq: MBAP 473.

MBAP 487. Marketing Execution. 1.5 Unit.

Marketing Execution is where strategy becomes action--and results. In this hands-on, high-impact course, you'll learn how to bring bold marketing plans to life across today's most critical channels and markets. From digital campaigns to B2B ecosystems, global marketing tactics to cutting-edge pricing strategies and MarTech tools--you'll gain the practical know-how to execute with precision and agility. You won't just study what marketers should do--you'll practice what successful marketers actually do. Through dynamic simulations, real-world case studies, and actionable frameworks, you'll bridge the gap between theory and practice. By the end, you'll not only understand marketing--you'll be ready to lead it with confidence, clarity, and measurable results. From strategy to success--master the art of marketing execution.

MBAP 488. Leading Organizations. 1.5 Unit.

This course empowers future leaders to architect and execute impactful organizational transformations. Through a deep dive into leading change theories, including the structured precision of Kotter's 8-Step Process and the strengths-based innovation of Cooperrider's Appreciative Inquiry, you will master the art and science of change. By course completion, you will be equipped to diagnose complex organizational challenges, design robust change strategies, build high-performing change teams, effectively navigate resistance, and ultimately deliver sustainable competitive advantage by fostering adaptive and resilient organizational cultures. This is your blueprint for becoming a highly sought-after driver of positive, lasting change.

MBAP 499. Introduction to Learning Skills. 0 Unit.

Whether you are an online student, a student attending classes on campus, or a mix of both this course will equip you with the skills necessary to become a successful graduate student. Throughout this course you will learn more about yourself as a learner, how to apply universal standards for critical thinking to the evaluation of professional literature, and how to effectively balance your competing responsibilities as you begin your journey toward your degree.

Management (MGMT)

MGMT 1. Supervised Professional Practicum - Semester 1. 0 Unit. A professional practicum is a workplace experience, the primary goal of which is the intellectual, personal and professional growth of the student. It occurs under the sponsorship or supervision of a mentor in the workplace who is committed to seeing that it is an educational as well as a work venture. It requires skills appropriate to the student's year in college and provides students with new skills, insights and experiences that are transferable back to the academic setting and/or to a future position in the workplace. (Only available to declared Weatherhead Accounting or Management majors.) Prereq: Junior standing or higher.

MGMT 198. Experience in Business Problem Solving. 1 Unit.

This experiential learning course introduces first-year and second-year students to the experiential learning model, problem solving methodology, the value of building strong client relations in the business world, and the ways in which various topics are addressed in organizations. The experiences in this course are meant to simulate the interaction and work conducted by employees in professional service firms. Working in teams, students are exposed to a real-life business project, meeting both a set deadline and client expectations and culminating in a live presentation to the client at the end of the semester. The course is intended for students intending to work in business and thus majoring in business management, business information technology, economics, finance, accounting, and/or marketing. Prereq: First year or Sophomore student standing only.

MGMT 2. Supervised Professional Practicum - Semester 2. 0 Unit.

A professional practicum is a workplace experience, the primary goal of which is the intellectual, personal and professional growth of the student. It occurs under the sponsorship or supervision of a mentor in the workplace who is committed to seeing that it is an educational as well as a work venture. It requires skills appropriate to the student's year in college and provides students with new skills, insights and experiences that are transferable back to the academic setting and/or to a future position in the workplace. (Only available to declared Weatherhead Accounting or Management majors.) Prereq: Junior standing.

MGMT 201. Contemporary Business and Communication. 3 Units.

This course is designed to survey business topics, issues, and practices. Students will be introduced to each of the functional areas of business, including accounting, finance, marketing, operations, business intelligence, and human resources management. The course is designed to help students appreciate the interrelationship of these business functions and, more generally, the role and context of business in society. Other topics considered include: the economic and legal environment of business, the globalization of markets, workforce diversity, leadership and entrepreneurship. To convey course content, lectures, in-class discussions, exercises, simulations, and guest speakers are used. Weekly discussions and a high level of student interaction amplify on class materials and concepts by focusing on contemporary issues of actual businesses.

MGMT 205. Essentials of Personal Finance. 1.5 Unit.

This course will provide students of all disciplines with an essential foundation in personal finance. The course will focus on four core areas of personal finance: 1) Budgeting & saving, 2) Investing, 3) Obtaining credit & controlling debt, and 4) Minimizing financial risk through the use of insurance. The course will also cover the essentials of personal taxation, retirement planning, and estate planning. This course will enable students to gain the fundamental knowledge and skills needed to make wise financial decisions as they move forward in life, which in turn will impact their ability to function as productive leaders in the workplace and financially literate citizens. Counts as a Full-Semester Wellness/Non-movement course. Prereq: Sophomore standing or higher.

MGMT 206. Personal Financial Management with Digital Technology. 1 Unit.

In the digital era, financial technologies have worked its way into our digital wallets and portfolio. Mobile banking services, budgeting and investing apps are inextricably linked with how we conduct our personal finances. While financial literacy deals with underlying finance concepts such as time value of money, compounding, budgeting and investing, financial technologies dictate how we access tools to carry out dayto-day budgeting, investing and consuming. In the digital era, financial technologies, Fintech, serves as an enabler of financial literacy, FinLit. While technology is not a substitute for literacy, Fintech complements literacy. Technology has created a level playing field and has advanced the access to credit and investments. This course will cover four areas: 1. Comparing banking services and costs 2. Digital banking: Using mobile apps and financial technologies for financial management and decision making 3. Personal finance and digital money 4. Risks in the digital era: Identity protection Offered as BAFI 206 and MGMT 206. Prereq: Sophomore standing or higher.

MGMT 222. American Business - History, Performance, and Critical Perspectives. 3 Units.

Businesses affect all of us in various ways. Because of that, the utility and relevance of our studies in this course will be obvious to all, regardless of what career paths you may eventually choose to pursue. As a result of taking the course, you can expect to broaden your perspectives, expand your reading range, and your communication and critical thinking skills. You will enhance your skills of argumentative scholarly writing, something that can benefit you in your own eventual professional spheres. The aim is to promote an eclectic study of sources offering divergent perspectives on the big questions they attempt to tackle. A significant part of the course will also be devoted to considerations of the ethical and moral imperatives for business. The course is concerned with the nature, rationale, and consequences of America's business philosophies and practices as they influence Americans and the world at large. The starting point for our inquiry will be a famous phrase spoken by President Calvin Coolidge in 1925: "the chief business of the American people is business." Counts as a Communication Intensive course.

MGMT 224. What is Making and Manufacturing Today, and Why is Innovation Part of the Story?. 3 Units.

As a Communication Intensive course, students will learn about making, manufacturing, and innovation through a historical lens by engaging with the content through various types of communication mechanisms: academic writing, public communication, making, and oral presentation. More specifically, the content centers around the rise of the creative class into the world of "making", and how it has resulted in new economic models, new definitions of manufacturing, and new ways of working. "Making" is inclusive of a wide variety of activities, from arts & crafts, to woodworking, to high technology integrating with traditional craftsmanship and individualized customization, to products with embedded sensors in traditional materials, to the use of 3D printing of everything from polymers to metals to chocolate. Within all of these approaches, "innovation" is often the buzzword, the common denominator. What does innovation mean in this context? Are innovators and makers today any different from the innovators and manufacturers of the past? What ethics are associated with the decisions related to new idea development and scale up? Through various communication modalities, the class will explore the commonalities between makers and manufacturers, and arrive at an understanding of innovation and apply this understanding to a project that could reach beyond the boundaries of CWRU. Counts as a Communication Intensive course. Prereg: Academic Inquiry Seminar (AIQS) or SAGES First Seminar.

MGMT 299. Industry Project Experience: Global Career Accelerator. 3 Units.

The Global Career Accelerator is a for-credit, virtual, experiential learning program that enables undergraduate students from all backgrounds to gain authentic work experience and in-demand global skills. This project-based opportunity provides real-world experience where students collaborate with peers and work individually on projects for various organizations. The experience includes video lessons, live online classes, and completing skill-building portfolio projects for iconic organizations like Intel, L'Oreal, The Grammys, and charity:water. Students complete Al-powered projects, co-designed with our brand partners and OpenAl. These projects will leverage Al technologies in the context of professional-level work. Successful students will earn an 'Al Skills' digital credential for LinkedIn. The course offers multiple tracks, including Data Analytics, Coding for Data, Digital Marketing, and Career Discover, for which you will select one track per course. The course may be repeated for each track.

MGMT 315. International Management Institute. 3 Units.

The course provides undergraduate students with a unique overseas visitation, language orientation, and management subject experiences during periods such as Spring Break, or during interims immediately following the end of the semester. Opportunities for diverse cultural and language experiences which result from the institute are added benefits of these programs. Counts as a Local & Global Engagement course.

MGMT 360. Special Topics and Issues in Management. 1 - 9 Units.

This course option is available to qualified students who are undertaking special projects in a management related field.

MGMT 395. Advanced Seminar. 1 Unit.

This seminar, for Accounting and Management majors with junior class standing or above, provides an opportunity to consider topics of importance in the community of ideas and activities related to the professional and managerial world. The development of writing and communication skills and in-depth discussion are expected attributes of seminar activity. The topic and scope of the coverage will be defined by the course instructor as consistent with the seminar approach to learning of the University. Accounting and Management majors must complete three seminars, each with a different topic. No academic credit will be earned for repeating seminars with the same topic. Counts as a SAGES Departmental Seminar course. Prereq: Declared Accounting or Management major and at least Junior standing.

MGMT 396. Experience in Business Consulting for Sustainable Impact. 3 Units.

Experience in Business Consulting for Sustainable Impact is a real-world learning opportunity for Weatherhead undergraduate students to step out of the traditional classroom and work with faculty and business mentors as well as company leaders. It is an immersive, applied learning project, providing an exciting and rigorous educational platform for Weatherhead students to learn what makes a truly sustainable business, while engaging and assisting the business community to become more sustainable in their practices. This course trains and supports teams of students to serve as researchers, project managers and consultants for companies that aim to assess and improve their social and environmental impact. Counts as a Capstone Project course. Prereq: Academic Inquiry Seminar (AIQS) and Sophomore student standing.

MGMT 397. Undergraduate Research Project. 3 - 6 Units.

This course provides a supervisory structure for students completing and a capstone research project in the Weatherhead School of Management. Arrangements should be made by consultation with a faculty member selected and the Senior Capstone Committee of the School of Management. Open to all management and accounting majors and other qualified students with instructor approval. A written report, presentation to the faculty department most closely related to the student's topic, and an approved public presentation are required. Counts as a SAGES Senior Capstone course.

MGMT 398. Action Learning. 6 Units.

This is an experiential course built around consulting projects in local organizations. Each project is focused on solving a business problem or pursuing a business opportunity. Each student will work in a team to analyze the current situation and identify related problems/opportunities, conduct research, analyze findings, creatively envision alternatives, and recommend an appropriate course of action and next steps. Throughout the semester students will receive instruction and coaching on the problem solving approach used in the course. Counts as a SAGES Senior Capstone course. Prereq: (ACCT 102 or ACCT 200) and BAFI 355 and MKMR 201 and Senior standing with a declared Accounting or Management major.

MGMT 418. Curricular Practical Training. 0 Unit.

This course is intended for graduate business students who wish to gain curricular practical training in support of career goals. The experience developed in an internship will complement academic experience gained in Weatherhead classes.

MGMT 456. Beyond Silicon Valley: Growing Entrepreneurship in Transitioning Economies. 3 Units.

The path for entrepreneurs to grow their companies outside of welldeveloped entrepreneurial ecosystems like Silicon Valley is challenging. Most markets around the world do not look like Silicon Valley, and they never will. But there are other models to support new businesses. In transitioning markets (where entrepreneurs do not have much access to private sector financing), government officials, donors, and business leaders are experimenting with creative approaches to support the growth of entrepreneurs. Cleveland is one such community. This seminar will explore some of these innovative approaches.

MGMT 458. International Institute. 3 Units.

The International Institute involves semester-long study of a particular region, followed by a class trip to an area within that region. The preparatory coursework varies depending on the region selected for that particular semester; however, it typically consists of research about cultural, financial, political, and economic topics. The trip consists of daily research meeting with organizations within the region being studied. Upon return, a summary exercise is required to complete the coursework. The class trip is a mandatory component of the course.

MGMT 467. Commercialization and Intellectual Property Management. 3 Units.

This interdisciplinary course covers a variety of topics, including principles of intellectual property and intellectual property management, business strategies and modeling relevant to the creation of start-up companies and exploitation of IP rights as they relate to biomedicalrelated inventions. The goal of this course is to address issues relating to the commercialization of biomedical-related inventions by exposing law students, MBA students, and Ph.D. candidates (in genetics and proteomics) to the challenges and opportunities encountered when attempting to develop biomedical intellectual property from the point of early discovery to the clinic and market. Specifically, this course seeks to provide students with the ability to value a given technological advance or invention holistically, focusing on issues that extend beyond scientific efficacy and include patient and practitioner value propositions, legal and intellectual property protection, business modeling, potential market impacts, market competition, and ethical, social, and healthcare practitioner acceptance. During this course, law students, MBA students, and Ph.D. candidates in genomics and proteomics will work in teams of five (two laws students, two MBA students and one Ph.D. candidate), focusing on issues of commercialization and IP management of biomedical-related inventions. The instructors will be drawn from the law school, business school, and technology-transfer office. Please visit the following website for more information: fusioninnovate.com. Offered as EBME 467, ECSE 467, GENE 367, GENE 467, LAWS 5341, MGMT 467, and RGME 467.

MGMT 468. Commercialization and IP Management II. 3 Units.

This course will concentrate on early-stage product development, with a focus on conventional approaches to venture financing, regulatory positioning and navigation, corporate licensing/partnering, and investment pitch methodologies. The content of the course will include specific innovations vetted by CWRU Technology Transfer and facilitation by the product Principal Investigator The course will culminate in a presentation for financing to a panel of investors, clinical thought leaders and/or economic development professionals; in a simple sense, students will learn how to position a qualified opportunity for earlystage development and financing towards ultimate clinical and market introduction. Offered as EBME 468, GENE 468, LAWS 5342, MGMT 468, and RGME 468.

MGMT 495. AMES Business Model. 3 Units.

AMES BUSINESS MODELS is an experiential course designed to explore the challenges that face entrepreneurs and established organizations as they develop new business models. Throughout the course we will address four general questions regarding business models: What are the key elements of any business model? How do those elements work in concert to create value? What challenges do innovators face as they explore new business models? What tools and techniques help innovators reduce their risk and enable growth? At the end of this course students should be able to: Describe the essential elements of a business model and how that model is meant to create value. Assess the potential of any business model and the key assumptions upon which it is built. Design and execute experiments to efficiently validate (or invalidate) those assumptions. Whether students plan to join an existing organization or start their own, these tools will provide a foundation for creating innovative, sustainable businesses. This course will focus Intrepreneurship (creating and testing new business models within an established organization).

MGMT 497. Action Learning Project. 3 Units.

This course allows teams of students to integrate functional, core knowledge and apply analysis and strategic management skills in a realworld setting. Students will be evaluated by the instructor and the project managers at the client organizations. Prereq: Part-time Cohort MBA Students and Master of Healthcare Management students only.

MGMT 501. Special Problems and Topics. 1 - 18 Units.

This course is offered, with permission, to students undertaking reading in a field of special interest.

MGMT 502. Independent Study. 1 - 18 Units.

This course is offered, with Dean's Office permission, to students undertaking reading in a field of special interest.

MGMT 560. Theoretical Perspectives in Management. 3 Units.

This seminar exposes students to management theories from a variety of disciplines. The goal of the course is to help students learn to synthesize and contrast theories to develop hypotheses of their own. Prereq: Ph.D. standing or consent of instructor.

MGMT 571. Measurement Theory and Method. 3 Units.

This doctoral seminar focuses on the theoretical and methodological issues involved in social science measurement. Specifically, the course will cover topics in basic principles of measurement including Classical Test Theory, Reliability, Validity, and Item Response Theory, as well as related tools for measurement analysis including Exploratory and Confirmatory Factor analysis. In addition, the course will expose students to analytical methods that model measurement error in simultaneous equations including models with mediation and moderation effects. This course involves extensive use of statistical packages including SPSS, LISREL, and EQS. Prereq: Ph.D. standing.

MGMT 573. Applied Multivariate Data Analysis. 3 Units.

The objectives of the seminar are to provide students with an understanding of the substantive and methodological issues involved in applied multivariate data analysis. The seminar aims to expose students to the assumptions, principles and applications of a selected set of multivariate techniques including Logistic Regression, MANOVA/ Discriminant, Profile, Multilevel and Latent Growth Model analysis. This course involves extensive use of statistical packages including SPSS, LISREL, and EQS. Prereq: Ph.D. standing.

MGMT 602. Advanced Topics. 1 - 18 Units.

This is a course of flexible design to meet advanced theoretical and/or methodological needs of doctoral students. Approval is needed from the instructor, and it requires a letter grade.

MGMT 614. Business as an Evolving Complex System. 3 Units.

The goal of this course is to provide a foundation for understanding how business systems evolve, why the business systems in the major advanced countries have evolved differently over the last 100 years or so, and what the underlying driving forces are. The focus is on transformation rather than economic growth. The course examines the evolution of business systems as a result of technological and organizational change. It deals with the role of history, culture and finance in generating business organizations in various countries. The course also studies the emergence of regional innovation systems and industry clusters, as well as how digitization and globalization are changing the industrial logic. Prereq: Must be enrolled in PhD in Mgt: Designing Sustainable Systems.

MGMT 616. Global Economic Systems and Issues. 3 Units.

This course provides a framework and analytical tools for understanding globalization and international economic relations in the context of the global political system. It analyzes the economic and political forces that are shaping global cooperation on economic matters, the role and impact of international economic institutions such as the World Bank, the International Monetary Fund, and the World Trade Organization, and evolving forms of regional governance, such as the European Union. It covers national and international policies and development and the causes and cures of international financial crises. The course revolves around concepts of efficiency, equality, power and institutions in the making of public policy towards globalization of communications and transportation. Prereq: Must be enrolled in Ph.D in Management: Designing Systems track.

MGMT 638. Qualitative Inquiry I. 3 Units.

This course explores ways to conceptualize an object of study and facilitates formulation of students' conceptual work and production of research reports at the end of the first year of the program. The course conveys how to generate research ideas by critically reviewing literature and developing ideas that contribute to a problem or issue of interest by working with theory and extending previous research. The practicality of conducting certain kinds of research is evaluated and length, intensity and ethical constraints of different research efforts are examined. Each student produces a report communicating and supporting a conceptualization of the phenomenon of interest involving independent, mediating and dependent variables. The paper defines a problem of practice, presents, both visually and in narrative form, concepts shaped by field experience and prior writing that promote understanding of the problem, and includes a research proposal describing sample, data collection and data analysis. Prereq: (DBAP 665 or MGMT 665) and enrolled in the Ph.D. in Management (Accountancy, Design and Innovation, or Designing Sustainable Systems) Program or the Ph.D. in Organizational Behavior Program.

MGMT 640. Social Ethics: Contemporary Issues. 3 Units.

The course draws upon intellectual ancestors and current thinkers in moral philosophy and ethics to assist each student in identifying, analyzing, and discussing social and ethical questions pertaining to the definition and purpose of contemporary life, the need for moral coherence, and the meaning of life in a global society. The unifying theme of the course is Tolstoy's question, "How then shall we live?" The course does not seek to provide answers to the great questions of life. Rather, it tries to expand each student's capacity to grapple with such questions. Prereq: Must be enrolled in Ph.D in Management: Designing Sustainable Systems track.

MGMT 641. Qualitative Research Methods II. 3 Units.

This course guides the student in conducting the qualitative research project that was proposed in DBAP/MGMT 638. Fieldwork and initial analysis is conducted during the summer when data based on semistructure interviews is collected and analysis begins using inductive coding techniques. A summer residency is held in mid-June to assess progress as final data collection and analysis continues. The aim of the fall semester is to prepare a formal research report on that project, which will be submitted to an academic research conference. The final report includes a revision of one's conceptual model, integrating new understandings and literature arising from the data collection and analysis. Prereq: Must be enrolled in Ph.D. in Management (Accountancy, Design and Innovation or Designing Sustainable Systems) or Ph.D. in Organizational Behavior Program.

MGMT 642. Directed Studies Seminar. 0 - 9 Units.

At different times during the Program, DM/DBA students register for Directed Studies courses. The purpose of these courses is to recognize the work the students are doing to conduct and present their individualized research at a high quality level. Activities conducted under the Directed Studies courses have deliverables dedicated to the collection of qualitative or quantitative data and the preparation of research reports. Offered as DBAP 642, EDMP 642 and MGMT 642. Prereq: Must be enrolled in Ph.D in Management: Designing Sustainable Systems track.

MGMT 643. Measuring Bus Behav & Struc. 3 Units.

This course aims to develop the basic foundations and skills for designing and executing generalizable studies that measure business behaviors and structures. It focuses on building competence in building of measurement systems, construct measurement, research design, data collection methodologies, and application of analytical software commonly involved in quantitative inquiry. Covered topics include framing research questions, reliability and validity of measurement, quasi-experimental research design, and fieldwork for data collection. Classes are designed to balance theory and practice through quantitative research design and will be linked to the participant's own research project. Prereq: Must be enrolled in Ph.D in Management: Designing Sustainable Systems track.

MGMT 645. Integration of Qualitative and Quantitative Inquiry. 3 Units.

Using the mixed method research toolkit developed in previous courses, this course focuses on critically analyzing selected pieces of published applied and policy research to develop a critical appreciation of issues and debates that have wide applicability and relevance. In particular, it offers students ways to integrate and triangulate using a mixed method approach, different forms of evidence, and related evidence. In addition, this course addresses common method choice and justification issues and related challenges of validity and theory formulation that typically arise during the students' execution of a series of individual research projects. Application of critical analysis and appreciation approach in justifying mixed methods designs to the student's own research work is encouraged and supported by sharing and discussing common research and methodology themes and problems. Prereq: Must be enrolled in Ph.D in Management: Designing Sustainable Systems track.

MGMT 646. Advanced Analytical Methods for Generalizing Research. 3 Units.

This course addresses advanced topics in regression and structural equation modeling such as latent growth curve models, partial least squares, logit models, tests for various types of invariance, multiplegroup analysis, multilevel analysis, and analyzing qualitative/categorical data. These analytical methods are intended to enhance the student's toolkit as to facilitate a strong bridge to the academic literature and the application to specific data based problems that arise in applied managerial research. Prereq: Must be enrolled in Ph.D in Management: Designing Sustainable Systems track.

MGMT 648. Causal Analysis of Business Problems I. 3 Units.

Causal Analysis of Business Problems I introduces fundamental concepts in theory-based model building and validation. In this course students will develop, explore, refine a range of models appropriate for addressing their problem of practice including classification models, process models, variance models, and articulating nomological networks. In particular, the course will focus on effective conceptualizations of causation, control, mediation, and moderation. Further, foundational statistical techniques such as tests of assumptions of the data, exploratory factor analysis, and regression and path analysis will be introduced to analyze concepts of causation, control, mediation and moderation. Prereq: Only for students in PhD in Management: Designing Sustainable Systems, or by permission of the Program Director.

MGMT 649. Experimental Design and Analysis. 3 Units.

This course will guide students through the theoretically-grounded variance models that are required for testing through structural equation modeling (SEM) in the quantitative portion of their research. Fundamental concepts in model testing will be reinforced using path analysis, and will include a deeper exploration of moderation by addressing topics such as moderated mediation and interaction effects. Beyond the analysis the course will emphasize precise and accurate formulation of theoretical models and associated reasoning, as well as careful interpretation of findings. The class will also delve into testing of data assumptions and prepare students for the model testing portion of their capstone assignments. Prereq: Enrolled in the PhD in Management or PhD in Organizational Behavior program.

MGMT 664. Knowledge Dissemination to Influence Managerial Practice. 3 Units.

The aim of this course is twofold. First, it supports students organizing and writing their DM thesis overview or their PhD thesis proposal. Also discussed are ways to organize and communicate in scientific genres, their aims and their generic properties. Secondly, students become acquainted with scientific communication and publishing. Effective reviewing, criteria for judging articles and theses, management of review processes, and how to communicate and respond to reviews are topics discussed. The course also addresses publication strategies and ways of managing and communicating scientific and managerial knowledge to different stakeholders. Prereq: Must be enrolled in Ph.D in Management: Designing Sustainable Systems track.

MGMT 665. Introduction to Research Inquiry. 3 Units.

This course begins participants' three-year research experience. Energized by one's personal passion and commitment to the topic, we seek for the work to be accomplished at a level that makes it worthy of widespread dissemination and influence as engaged scholars. The goal in this course is to prepare students to develop their minds as scholars by understanding the world of research; develop a research identity by identifying one's research domain; learn to read academic literature and write in a scholarly style; work with academic literature to identify and digest concepts and theories that inform research on that problem; begin to develop a conceptual model that abstracts how the world may be functioning in that problem domain and points to a research question that can guide the next stage of the research. The final deliverable for this course is to present the research topic with substantiation for its significance, relevance and timeliness in the management field. This would include the research question(s); the literature review; and proposed qualitative methodology and analytical approach(es). Prereq: Enrolled in the Ph.D. in Management (Accountancy, Design and Innovation, or Designing Sustainable Systems) Program or Ph.D. in Organizational Behavior Program.

MGMT 677. Designing Sustainable Systems. 3 Units.

Students in teams will recognize and work in practice on a managerial problem that involves dimensions of sustainability and design. They will develop a set of solutions to the problem by generating alternative models and intervention strategies to address the problem. The project results in a short presentation and written communication of the solution in a form of a poster or prototype. The course will also include presentations of intervention and action research approaches and issues of inquiry validation and theory development. Prereq: Only for students in PhD in Management: Designing Sustainable Systems.

MGMT 681. Research Designs and Analytics for Archival and Online Data. 3 Units.

This course introduces basic concepts and statistical techniques of research designs and analytics for archival and online data. It also introduces the foundations of causal inference, as well as validity and reliability in quantitative research. These tools prepare students for testing models of a management phenomenon that rely on compiling data from different available sources and analyzing the compiled data for insights and hypotheses testing. Three specific statistical approaches emphasized in the course include understanding how to (a) compile meaningful archival/online data to pursue a research question, (b) clean, process and integrate different data sources, and (c) analyze the compiled using data mining and hypotheses testing tools. The focus will be on opening the choices of research designs that are flexible to accommodate the varied research questions of interest to students. Robustness checks for archival and other forms of data will also be explained and utilized.

MGMT 682. Foundational Statistical Analysis and Measurement. 3 Units.

There are two major goals for second year quantitative study: (a) to build competence in research design and methodology for collecting and analyzing quantitative data, and (b) to develop a foundation for formulating questions for quantitative inquiry and critically interpreting products of such inquiry. This course specifically will focus on the three main stages in structural equation modeling: 1. Data preparation 2. Measurement validation 3. Structural modeling The details of each of these stages will be reviewed in this course. To summarize, the course will focus on the global and local criteria that must be considered when conducting valid quantitative analysis with structural equation modeling We will also devote some time and energy to practicing relevant theorizing through abductive reasoning of proposed structural models. Prereq: Enrolled in the PhD in Management or PhD in Organizational Behavior programs.

MGMT 683. Integration of Methods Sequence. 3 Units.

This course ensures that the Quantitative Research paper is complete and provides guidance for PhD students who will prepare a draft research proposal for their thesis. Students are provided with hands on writing, data analysis and data organization though seminars and skill building workshops. Prereq: Enrolled in the PhD in Management - Designing Sustainable Systems track.

MGMT 701. Dissertation Ph.D., 1 - 9 Units.

(Credit as arranged.) Prereq: Must be enrolled in Ph.D. in Management: Designing Sustainable Systems and have predoctoral research consent or advanced to Ph.D. candidacy milestone.

Management & Engineering (MGTE)

MGTE 400. Leadership Assessment and Development (LEAD). 3 Units. The goal of the course is to help students learn methods for assessing their knowledge, abilities, and values relevant to engineering and management, and for the acquiring of new professional knowledge and skills throughout their career. Recommended preparation: Senior status in engineering.

MGTE 405. Project Management. 3 Units.

Project Management is concerned with the management and control of a group of interrelated tasks required to be completed in an efficient and timely manner for the successful accomplishment of the objectives of the project. Since each project is usually unique in terms of task structure, risk characteristics and objectives, the management of projects is significantly different from the management of repetitive processes designed to produce a series of similar products or outputs. Large-scale projects are characterized by a significant commitment of organizational and economic resources coupled with a high degree of uncertainty. Thus, the objective of the course is to understand what are the main issues and problems in the management of projects and to have a thorough knowledge of the conceptual models and techniques available to deal with them. Recommended preparation: Senior status in engineering.

MGTE 410. Accounting, Finance, and Engineering Economics. 3 Units. This class uses a combination of class lecture and discussion, in combination with problem-type and case-type assignments, to introduce you to key concepts and tools of financial economics. You are expected to use the resources at your disposal, such as the textbook or the accounting dictionary, to help you understand any unfamiliar concepts. Normally, each class will be divided into two sections. The first part of each class session will be devoted to discussions of selected problems and cases, with focus on the specific topics being covered. The second part of each class will be devoted to prepare you for the following session class assignments. Recommended preparation: Senior status in engineering.

MGTE 419. Entrepreneurship Through Acquisition III. 1.5 Unit. This is one of three Entrepreneurship through Acquisition (ETA) courses. ETA is the path to becoming an entrepreneur by buying and growing an established small business. ETA III exposes students to the journey ETA entrepreneurs follow when going from employee to business owner, with emphasis on the "sponsored search" strategy. Course emphasis is on experiential learning components with class guests who are primarily ETA entrepreneurs and people who work closely with ETA entrepreneurs (e.g., investors, bankers, and other advisors) and case studies of over 40 Weatherhead Alumni and others who have become

business owners using ETA strategies. Many ETA strategies incorporate support from investors and advisors who provide capital and experience to complement the ETA entrepreneur's efforts to find, acquire, and run a business. Becoming a business owner using ETA is challenging. However, when proven strategies are used, it can be much less risky than doing a "startup" around a less proven product or service. This course is designed to be relatable and practical, giving students direct exposure to what it takes to pursue this path and evaluate if it's right for them. Offered as DESN 319, DESN 419, and MGTE 419. Prereq: Enrolled in the Master of Engineering and Management program.

MGTE 424. Chief Executive Officer. 3 Units.

This course will take the perspective of the CEO in deciding the actions that lead to sustainable competitive advantage. We will study decisions that span from starting a small business to expanding beyond the core using mergers and acquisitions. We will also study how CEOs decide to exit a market. The successful CEO not only has to design the strategy for success but has to also design an execution plan. As the organization grows the importance of delegation to the right subordinates becomes increasingly critical. The course material includes case studies, decision briefs and presentations (virtual and in person) by senior executives. Decision briefs are short notes that have the same information that the CEOs had when starting the business. You will develop the strategy based on these decision briefs and will compare your suggestions to what was actually done by both successful and unsuccessful CEOs. Offered as DESN 425 and MGTE 424. Prereq: Enrolled in the Master of Engineering and Management program.

MGTE 425. Understanding People and Change in Organizations. 3 Units. This course is intended to help students assess events occurring in organizations from a behavioral and human resources perspective and to help them develop strategies for managing these events. The course applies knowledge from the fields of organizational behavior and human resource management to provide an understanding and the skills needed to be effective in organizations. The fields of Organizational Behavior and Human Resource Management are devoted to the study of how human beings act in organized settings and how organizations can affect human behavior through a variety of policies, practices, structures, and strategies. In today's environment, organizations are faced with high levels of international competition and an increasing pace of technological, market, and social changes. As an organizational member, you are expected to successfully operate within these increasingly complex demands as well as help create and guide change. The purpose of this course is to provide you with the framework and tools needed to analyze and operate in the changing organization. We will examine some of the features that characterize an emerging organizational form and contrast this to its traditional predecessor. The focus of the course will be on the skills you will need to operate in the "new" organization including skills for being a change agent working in entry level and early career managerial roles. Recommended preparation: Accredited Bachelor's in Engineering plus summer job experience. Prereg: Enrolled in the Master of Engineering and Management program.

MGTE 430. Product and Process Design, Development, and Delivery. 3 Units.

An integrated approach to the teaching of the complex relationship of customer to designer and to manufacturer, this course will be taught by faculty from WSOM and CSE, with participation of corporate representatives sponsoring projects for the teams. The course will be built on a series of projects, each emphasizing different aspects of the product/process design experience, selected to provide exposure to a wide variety of entrepreneurial activities. The project activities are expected to promote the development of realistic activities of crossfunctional teams. Prereq: Master of Engineering and Management students only.

MGTE 430A. Product Design and Development I. 3 Units.

An integrated approach to the teaching of the complex relationship of customer to designer and to manufacturer, this course will be team taught by faculty from WSOM and CSE, with participation of corporate representatives sponsoring projects for the teams. The course will be built on a series of projects, each emphasizing different aspects of the product/process design experience, selected to provide exposure to a wide variety of entrepreneurial activities. The project activities are expected to promote the development of realistic activities of crossfunctional teams. Recommended preparation: Accredited Bachelor's in Engineering plus summer job experience. Prereq: Enrolled in the Master of Engineering and Management program.

MGTE 432. Operations Research and Supply Chain Management. 3 Units.

This course is an introduction to Operations Research, and then focusing on applying Operations Research tools to manage business and organizations' Supply Chain Operations. Operations Research (also called Management Science) is the discipline of applying advanced mathematical methods to help make better decisions. By using techniques such as mathematical modeling to analyze complex situations, Operations Research gives executives the power to make more effective decisions and build more productive systems based on considerations of all available options, careful predictions of outcomes and estimates of risk, and the latest decision tools and techniques. Operations Research solves problems that arise in every business function (e.g., operations, finance, marketing, accounting, HR), every economy sector (e.g., financial, healthcare, industrial goods, technology, utilities), and every business type (e.g., for-profit and non-profit, start-ups and Fortune 500 companies), even government.

MGTE 440. Six Sigma and Quality Management. 3 Units.

The Six Sigma process is the standard for guality improvement in organizations around the globe. In this course, we study the details of the five steps in the Six Sigma process: DEFINE, MEASURE, ANALYZE, IMPROVE, and CONTROL (DMAIC). We introduce the concept of sustainability into the criteria to use to evaluate proposed solutions during the Six Sigma process. Many tools, concepts, and processes that are often an integral part of Six Sigma projects in companies are included in the course content. They range from the very basic tools of quality (such as cause-and-effect diagrams for brainstorming) to complete processes (such as benchmarking, quality function deployment, failure mode and effects analysis-FMEA). Statistical concepts that are central to Six Sigma including statistical process control and introduction design of experiments are also included. Once the Six Sigma process and its various components are understood, we study quality management including quality control, quality planning, quality improvement, strategic quality management, and quality strategy. Students meeting the required standards of performance will earn a Green Belt Certification in Six Sigma and Quality Management from the Weatherhead School of Management. Prereq: Enrolled in the Master of Engineering and Management program.

MGTE 450. Engineering Entrepreneurship. 3 Units.

Entrepreneurship is an area of importance to business leaders, educators, politicians, and individual members of the society. It is a driver of economic development and wealth creation in organizational units ranging in size from the individual company to entire nations. Technology-based entrepreneurship is particularly important to economic development due to its impact on productivity (innovations in action) and its potential for exponential growth. This course will emphasize and explore a variety of issues related to innovation and entrepreneurship, demonstrating that there are not many "absolute truths," but there are numerous best practices. Successful students will conclude this course with new knowledge about opportunity analysis and insight on entrepreneurship & innovation, as well as having demonstrated measurable improvement in their critical thinking skills. This course is one-semester version of a course taught alternatively as a two-semester course. Recent growth in CWRU curricula centered on entrepreneurship and related subjects enables students to specialize in, say, wealth creation, leadership, and finance topics once included under the broader two-semester umbrella. The current Fall version of the course culminates with student projects and presentations on opportunity analysis.

MGTE 472. BioDesign. 3 Units.

Medical device innovations that would have been considered science fiction a decade ago are already producing new standards of patient care. Innovation leading to lower cost of care, minimally invasive procedures and shorter recovery times is equally important to healthcare business leaders, educators, clinicians, and policy-makers. Innovation is a driver of regional economic development and wealth creation in organizational units ranging in size from the start-up to the Fortune 500 companies. In a broader context, the pace of translational research leading to product and service innovation is highly interdisciplinary, thus, new products and services result from team efforts, marked by a systematic, structured approach to bringing new medical technologies to market and impacting patient care. In this course we examine medical technology innovations in the context of (A) addressing unmet clinical needs, (B) the process of inventing new medical devices and instruments, and (C) subsequent implementation of these advances in patient care. In short, the student learns the process of "identify, invent, implement" in the field of BioDesign. Offered as EBME 472, MGTE 472, and SYBB 472.

MGTE 473. Fundamentals of Clinical Information Systems. 3 Units. Technology has played a significant role in the evolution of medical science and treatment. While we often think about progress in terms of the practical application of, say, imaging to the diagnosis and monitoring of disease, technology is increasingly expected to improve the organization and delivery of healthcare services, too. Information technology plays a key role in the transformation of administrative support systems (finance and administration), clinical information systems (information to support patient care), and decision support systems (managerial decision-making). This introductory graduate course provides the student with the opportunity to gain insight and situational experience with clinical information systems (CIS). Often considered synonymous with electronic medical records, the "art" of CIS more fundamentally examines the effective use of data and information technology to assist in the migration away from paper-based systems and improve organizational performance. In this course we examine clinical information systems in the context of (A) operational and strategic information needs, (B) information technology and analytic tools for workflow design, and (C) subsequent implementation of clinical information systems in patient care. Legal and ethical issues are explored. The student learns the process of "plan, design, implement" through hands-on applications to select CIS problems, while at the same time gaining insights and understanding of the impacts placed on patients and health care providers. Offered as EBME 473, MGTE 473, and SYBB 421.

MGTE 475. Technology Marketing Strategy. 3 Units.

High technology products and services are unique in the levels of ambiguity and risk that challenge a manager's ability to craft a marketing strategy. Understanding the customer, reading market trends, creating a compelling vision of value, and launching marketing programs (already foreboding tasks in traditional marketing situations) have a heightened sense of uncertainty in the context of high technology platforms such as nanotechnology and regulated medical devices. This course draws on contemporary ideas in literature by thought leaders in technology marketing. We work though several marketing models and methods in practice today to assist students synthesize and build appropriate conceptual and managerial frameworks for technology marketing practice. Offered as EPOM 475 and MGTE 475.

MGTE 476. Applied Statistics for Decision Support in Data Science. 3 Units.

In this intense summer application-oriented course, the goal is to bridge traditional statistical tools with the R language to prepare beginning graduate students for further study in data science. Managerial decision support involves the collection, analysis, and interpretation of data for understanding uncertainty and risk in decision-making; quite simply, decision support requires statistics! The "R" language plays a significant role facilitating the building of statistical and data science models and approaches to visualizing data and making predictions to support decisions, but absent a foundational knowledge in probability and statistics the impact of the tools and their use may not be fully realized. The course is project-based to provide direct application of probability and statistics to the extraction of knowledge from data. Prereq: Graduate student standing.

Information Systems (MIDS)

MIDS 301. Introduction to Information: A Systems and Design Approach. 3 Units.

This course is an introduction to the concept of information and the uses of information in organizations and social life. The course is for anyone who is interested in the evolution of digital culture and the influence of design, systems, and management in contemporary life. This will involve readings from a variety of disciplines, including mathematics, the social sciences, management and the humanities. We live in an "information ecology": a system of human activities served by a variety of technologies that are often grounded in local environments and with deep ethical implications. The goal of our course is to understand this system and how information has become a medium of human experience in our lives. There will be useful readings, but also exercises and projects that enable students to test and develop their understanding.

Marketing (MKMR)

MKMR 201. Marketing Management. 3 Units.

This is an introductory marketing course designed to provide students with the concepts and theories necessary for understanding the fundamental principles of marketing and its role in any organization. Students will learn concepts such as marketing orientation, marketingmix, relationship marketing and service logic, as well as behavioral theories of customer response and strategic frameworks of customer brand management. Students develop capabilities for understanding marketing issues in real world situations and to create and implement basic marketing plans. Prereq: At least Sophomore standing.

MKMR 304. Brand Management. 3 Units.

Successful innovation and management of brands and products creates customer, firm, and societal value. This course is designed to help students understand the principles of product and brand development and management such as understanding evolving customer needs; creating and delivering the right products, services, and experiences; and managing the process to enhance brand equity and customer satisfaction. Through text, cases, and simulation this engaging class will cover the branding process from new brand and product development; brand communication and promotion, and brand equity measurement. The course will also discuss specific topics such as global brands, brand extensions, brand revitalization, and social responsibility. Prereq: MKMR 201.

MKMR 308. Measuring Marketing Performance. 3 Units.

Evaluation and control are important strategic marketing processes and without effective and consistent measurement, these processes cannot be performed adequately. In recent years, marketing budgets have been challenged by top managers as the value of these expenditures to an organization's financial well being is not often clear. Marketing activities such as advertising, sales promotions, sales force allocation, new product development, and pricing all involve upfront investments and making these investments now require increasing scrutiny. This course will be about knowing and understanding what to measure, how to measure, and how to report it so the link between marketing tactics and financial outcomes is clearer. The course will include lecture by the instructor, readings, cases, computer based data exercises, and guest lectures. There will also be a team project requirement. Prereq: (ACCT 100 or ACCT 101) and ECON 102 and MKMR 201.

MKMR 310. Marketing Analytics. 3 Units.

To appreciate, design, and implement data-based marketing studies for extracting valid and useful insights for managerial action that yield attractive ROI, five essential processes are emphasized: (a) making observations about customers, competitors, and markets, (b) recognizing, formulating, and refining meaningful problems as opportunities for managerial action, (c) developing and specifying testable models of marketing phenomenon, (d) designing and implementing research designs for valid data, and (e) rigorous analysis for uncovering and testing patterns and mechanisms from marketing data. Prereq: MKMR 201 and OPRE 207.

MKMR 311. Customer Relationship Management. 3 Units.

Customer Relationship Management (CRM) is the strategic process of building and maintaining profitable, sustainable customer relationships through co-creation of value with customers in both business-to-business (B2B) and business-to-consumer (B2C) markets. This course starts with understanding the relationship between an organization's strategic goals and the structure and dynamics of organization-customer relationships. Topics include assessing CRM system design, implementation and management; the fundamentals of customer profitability analysis; customer portfolio management; B2B relationship management; sales force management and automation; and designing services programs to optimize customer experiences; and expanding customer relationships through services. Additionally, students will explore how one-to-one marketing and social networks enhance customer relationships. Learning will be accomplished through lecture and discussion, critical discussion of case studies and contemporary marketing issues, and interaction with experienced CRM marketing professionals. Prereq: MKMR 201.

MKMR 312. Selling and Sales Management. 3 Units.

Selling and sales management are keys to implementing an organization's marketing program and customer relationships. This course emphasizes developing an understanding of basic marketing concepts, selling principles, interrelationships among sales force management and other business functions, appropriate strategy for managing a sales force and measurement of sales force productivity. We will use theories of work motivation and explore how individual difference variables influence the choices of sales managers. This course uses a synthesis of sales research and leading practices to focuses on both a strategic and a tactical perspective. Strategic issues include: entrepreneurial strategy, the sales force's role in company strategy, customer relationship and strategic account management, sales force size and organization and career paths to sales management. Tactical issues include: effective approaches to selling, finding and retaining top sales talent, motivating and compensating the field force, evaluating performance, and aligning sales territories. Prereq: MKMR 201.

MKMR 348. Strategic Internet Marketing. 3 Units.

This course aims to prepare business students to think strategically and make effective marketing decisions in networked business environments. Given the increasing strategic significance of the internet across a broad spectrum of industries, it is imperative that business students develop a deep understanding of the emerging digital marketplace. The course will focus on the following topics: The emerging digital world; individuals and firms online; network technologies; business models on the internet; online branding; customer relationship management and loyalty in electronic markets; internet's impact on innovation and product management; online retailing; business-to-business e-commerce; multichannel management; sustainable competitive advantage in the digital marketplace; legal, ethical, and public policy issues related to digital technologies; organizing for online marketing. Prereq: MKMR 201.

MKMR 350. Social Media Strategy. 3 Units.

This course provides students with a broad overview of the current strategies and issues facing social media marketing today. The purpose of this class is to acquaint you with the application, analysis, synthesis, and evaluation of the theories and practice of social media strategy. We will examine the dynamic strategies and tactics that leading companies are using to supplement their traditional marketing. The emphasis of this course is on understanding consumers' social interactions, examining the various social media channels available to marketers, learning how to build social marketing strategies, and practicing how to track their effectiveness. Prereq: MKMR 201.

MKMR 360. Independent Study. 1 - 3 Units.

This course is offered, with permission, to students undertaking reading and research in an area of their special interest.

MKMR 405. Business Marketing. 3 Units.

This course focuses on concepts and practices of business-to-business marketing of products and services. It also examines how rapid technological change impacts industrial markets. Topics covered include: buyer-seller relationship building, competitive bidding, developing markets for new materials and value-based pricing strategies. Marketing to the government, marketing of intellectual property and marketing-R&Dmanufacturing interface issues will also be explored. Prereq: MBAP 407 or MBAC 506 or HSMC 407.

MKMR 408. Marketing Metrics. 3 Units.

Evaluation and control are important strategic marketing processes and without effective and consistent measurement, these processes cannot be performed adequately. In recent years, marketing budgets have been challenged by top managers as the value of these expenditures to an organization's financial well being is not often clear. Marketing activities such as advertising, sales promotions, sales force allocation, new product development and pricing all involve up-front investments and making these investments now require increasing scrutiny. This course will be about knowing and understanding what to measure, how to measure and how to report it so the link between marketing tactics and financial outcomes is clearer. The course will include lecture by the instructor, readings (no textbook), cases, computer based data exercises and guest lectures. There will also be a team project requirement. Prereq: MBAC 506, MBAP 407 or HSMC 407.

MKMR 410. Marketing Insight Management. 3 Units.

To appreciate, design, and implement data-based marketing studies for extracting valid and useful insights for managerial action that yield attractive ROI. Five essential processes are emphasized: (a) making observations about customers, competitors, and markets, (b) recognizing, formulating, and refining meaningful problems as opportunities for managerial action, (c) developing and specifying testable models of marketing phenomenon, (d) designing and implementing research designs for valid data, and (e) rigorous analysis for uncovering and testing patterns and mechanisms from marketing data. Prereq: MBAC 506 or MBAC 511 or MBAP 403 or MBAP 407.

MKMR 411. Customer Relationship Management. 3 Units.

Customer Relationship Management (CRM) is the strategic process of building and maintaining profitable customer relationships through cocreation of value with customers. This course starts with understanding the relationship between an organization's strategic goals and customer relationships, including assessing CRM systems, management and implementation, in both B2B and B2C markets. Students will learn the fundamentals of customer profitability analysis, customer portfolio management, B2B relationship/sales force management and automation, designing services to optimize customer experiences, as well as expanding customer relationships through services. Additionally, students will explore how one-to-one marketing and social networks enhance customer relationships. Learning will be accomplished through critical discussion of case studies and contemporary marketing issues, and hands-on group project and presentation, and interaction with experienced CRM marketing professionals. Prereq: MBAP 407 or MBAC 506 or HSMC 407.

MKMR 412. E-Marketing. 3 Units.

Using a combination of lectures, cases, and hands-on projects, the course examines how the Internet influences all the key aspects of marketing, including marketing strategy, pricing, advertising, segmentation, marketing research, retailing, distribution channels, and international marketing. Additionally, the course will cover more Internet specific topics such as privacy, wireless web, sales force automation, and emarketplace models. The course incorporates both business-to-business and business-to-consumer outlooks. Prereq: MBAC 506 or MBAP 407.

MKMR 421. Marketing Value Creation. 3 Units.

Marketing value creation is the process of creating and managing successful brands through continuous innovation. Successful brand innovation and management requires understanding evolving customer needs: creating and delivering the right products, services, and experiences; and managing the process to enhance brand equity and customer satisfaction. Through text, readings, cases, high-profile guest lectures and team projects, this engaging class will cover the innovation and branding process from discovery of unmet needs, brand and product development, to brand promotion and advertising and brand equity measurement. A sustainability thread will weave through the course, covering topics such as brand's ecological footprint, product safety, eco-friendly branding, the ethics of advertising, the impact of pricing on consumers and corporate social responsibility. The result of proper sensitivity to customer needs, social concerns and the environment is integral to the process of value creation for customers, companies and society. Prereq: MBAC 506 or MBAP 407.

MKMR 501. Special Problems and Topics. 1 - 18 Units.

This course is offered, with permission, to students undertaking reading or a project in a field of special interest.

MKMR 601. Special Problems and Topics. 1 - 18 Units.

This course is offered, with permission, to Ph.D. candidates undertaking reading or a project in a field of special interest.

Positive Organizational Development (MPOD)

MPOD 414B. Managing Organizational Change and Real-World Challenges. 2 Units.

This is a hands-on course designed to provide students with the direct experience of tackling specific challenges assigned by the instructor in one of four thematic areas of mastery: 1) Leadership (emotionally intelligent leadership, or coaching with compassion) 2) Inclusive Leadership (diversity, equity, and inclusion) 3) OD & Systemic Change (appreciative inquiry, BAWB, positive impact interventions) 4) Team Effectiveness (managing & facilitating teams effectively or building and managing high performance teams) This is part two of a two-part course. Offered as LEOC 414B and MPOD 414B. Prereq: MPOD 414A.

MPOD 416B. Leadership and Executive Assessment and Development. 1 Unit.

Leadership with emotional intelligence will be examined by studying a number of topics and applying them to two major case studies: 1) a CEO; and 2) yourself. This course will explore questions such as: Who are effective leaders? Are they different from effective managers? How do they think and act? What makes us want to follow them? How are leaders developed? What and how can people (you) help others develop their competencies to become more effective leaders? (Part two of three) Prereq: MPOD 416A.

MPOD 416C. Leadership, Executive Assessment and Development. 1 Unit.

Leadership with emotional intelligence will be examined by studying a number of topics and applying them to two major case studies: 1) a CEO; and 2) yourself. In this context, coaching the development of leadership will be a major topic throughout the course. This course will explore questions such as: Who are effective leaders? Are they different from effective managers? How do they think and act? What makes us want to follow them? How are leaders developed? What and how can people (you) help/coach others develop their competencies to become more effective leaders? (Part three of a three-section course.) Prereq: MPOD 416B.

MPOD 418. Flourishing Enterprise. 2 Units.

Global issues such as climate change and food security, as well as heightened expectations for personal health and well-being in the workplace, are introducing greater levels of complexity into business strategy and operations, with far-reaching implications for customer satisfaction and employee engagement. Effective handling of these issues can lead to new sources of revenue generation and cost efficiency, as well as reputational value, while failure to do so can lead to financial and competitive risk. Offered as LEOC 418 and MPOD 418. Prereq: Open to MPOD candidates only.

MPOD 431. Experiential Learning for Individuals, Teams, and Organizations. 3 Units.

This course focuses on the theory of experiential learning and its application at the individual, team, and organizational levels of analyses. This course offers the chance for students to gain insight into their individual learning and adaptive styles, and how such styles impact the way they interact and have consequence for team. The course also explores how teams and organizations learn, and the effect that cultural determinants have on learning and adaptability. In addition, the course examines how learning theory can be applied to focused institutional development projects and educational processes. The course uses presentations, lectures, research findings, interactive activities, and class discussion. The current topics of interest are for the Masters in Positive Organization and Change (MPOD) candidates. It is led by a faculty member of the Department of Organization Behavior. Reflective essays and integrative papers will enable participants to explore their learning styles and that of their organizations and teams to strengthen the practice of OD and human systems change and development. Prereq: MPOD students only.

MPOD 431B. Team Development and Dynamics. 1 Unit.

The objectives of this course are to: Develop the capacity to see and assess team development. Recognize and understand the characteristics of effective teams and groups. Practice observing, intervening, and using team skills. Facilitate integration of your unique perspective, skills, and talents in working with teams. Further prepare you to be an effective team leader, team facilitator, consultant to team leaders and team members. This is part two of a two-part course. Offered as LEOC 431B and MPOD 431B. Prereq: MPOD 431A.

MPOD 439. Individual Mastery Projects. 3 Units.

The objectives of this course are to: 1) demonstrate the ability to frame and design a clear cut action research project applied to a given organizational development challenge or improvement opportunity; 2) show the ability to engage and mobilize others in a collaborative effort toward a collective outcome; 3) employ a defined change process and use theory from the field of OD (e.g., AI, EI, Sustainability, Organization Design, Strategic Thinking, etc.) to inform practice; 4) evince the ability to sustain momentum during the course of a project, while navigating the complexities that one normally encounters in an effort to complete the action research cycle; 5) provide evidence that theorganization development change project has had a positive benefit or impact; and 6) reveal sufficient self-reflection and mindfulness in ways that further your own and others personal or professional development. These six objectives will fundamentally be the same competencies that I will look for in grading Part 1 and Part 2 of your assignment. Toward these ends, you are expected to plan and execute a significant organization development, and/or change project with an ongoing client or employer. Emphasis is placed on the craft of developing projects that are consistent with one's current skills, career plans, and developmental needs that can be combined with the needs, opportunities, readiness, and resources of the client organization. Offered as LEOC 439 and MPOD 439. Prereq: Open to MPOD candidates only.

MPOD 470B. Leading Change from a Complexity Perspective. 1 Unit. In this course, we will continuously attempt to answer two questions: (1) What is the process of sustained, desirable change? and (2) What is the role of a leader? Concepts form complexity theory will be used, including understanding the multilevel nature of SDC at the individual, dyad, team, organization, community, country, and global levels. Intentional Change Theory (ICT) will be used as the organizing concept for the changes studied. In this context, coaching the development of leadership will be a major topic throughout the course. Prereq: MPOD candidates only.

MPOD 479. Organization Innovation. 3 Units.

This course focuses on the creative process and innovation journey at all levels -- individual, group, organization, and leadership. In this class we will explore creativity from several angles with a particular focus on the conditions that facilitate creativity and innovation. Offered as LEOC 479 and MPOD 479. Prereq: Open to MPOD candidates only.

MPOD 498. Global Citizenship and Multi-Cultural OD: International Study Tour. 3 Units.

This course will broaden perspectives and knowledge of how OD principles and technologies are generated and applied in contexts and cultures outside of North America. Selected literature representing global perspectives on the practice of OD and field experiences will provide support and background for personal experience and reflection on cross-cultural issues in organizing. The primary learning context will be an intense, 10-day study tour to some country outside of North America to provide the participants with opportunities for. 1) comparative studies of OD practices in different cultural settings; 2) in-depth experiences with OD practitioners and students in a different national, regional and cultural context; 3) co-inquiry with non-North American students also involved in developing OD knowledge and skills; and 4) on-site organization visits outside of North America to observe and learn about on-going dynamic change efforts. Prereq: Open to MPOD candidates only.

Operations Management (OPMT)

OPMT 350. Project Management. 3 Units.

Project management is concerned with the management and control of a group of interrelated tasks required to be completed in an efficient and timely manner for the successful accomplishment of the objectives of the project. Since each project is usually unique in terms of task structure, risk characteristics and objectives, the management of projects is significantly different from the management of repetitive processes designed to produce a series of similar products or outputs. Large-scale projects are characterized by a significant commitment of organizational and economic resources coupled with a high degree of uncertainty. The objective of this course is to enhance the ability of participants to respond to the challenges of large-scale projects so that they can be more effective as project managers. We study in detail up-to-date concepts, models, and techniques useful for the evaluation, analysis, management, and control of projects. Offered as OPMT 350, OPMT 450 and SCMG 450. Prereg: OPRE 301.

OPMT 377A. Business Forecasting. 1.5 Unit.

This course introduces nonmathematical managers to the major quantitative models designed for sound demand and system forecasting in today's complex and increasingly uncertain supply chains. Topics will also include reliability of historical data sets to forecast future patterns. The course will also cover non-quantitative tools to forecast demand for new products, services and technologies when historical data are not readily available. Emphasis is placed on a general understanding of theory, mechanics, application potential, available software packages, and templates. Offered as OPMT 377A, OPMT 477A and SCMG 477A. Prereq: OPRE 207 and OPRE 301. **OPMT 377B. Enterprise Resource Planning in the Supply Chain. 1.5 Unit.** Enterprise resource planning is the dominant system by which companies translate the needs from their customers into the detailed plans that the company must perform to meet the customer needs, and the resulting support the company will need from its suppliers. As such, it is a central player in the process of supply chain management. In this course, we study both the quantitative and qualitative concepts and techniques to help manage a company's operations to perform these important translation and planning tasks in order to help the company be successful. A major emphasis during the course is the design of processes and procedures (algorithms) for solving very complex (wicked) problems as a part of both class discussions and while working on case

studies, as well as critiquing the designs so as to clearly understand their

limitations. Offered as OPMT 377B, OPMT 477B, and SCMG 477B Prereq

OPMT 412. Lean Services Operations. 3 Units.

or Coreq: OPMT 377A.

The course will be delivered over four modules: 1) Service Process Blueprints, 2) Managing Capacity in Service Systems, 3) Mapping the Value Stream (current and future state), and 4) Inventory Management in Service Systems. The topics considered are viewed in the context of healthcare management, financial services, insurance firms, call centers, back-office operations, and other applications. Through these topics, the participants will be trained in tools that help them understand customers' expectations and needs and to identify service system characteristics that can meet these needs. We will learn how to identify errors in service and troubleshoot these problems by identifying the root causes of errors. Subsequently, we will discuss how one can modify the product or service design so as to prevent defects from occurring. Finally, we will establish performance metrics that help evaluate the effectiveness of the Lean system in place. These efforts will result to improved quality. This course is not oriented toward specialists in service management. Its goal is to introduce you to the environments and help you appreciate the problems that operations managers are confronted with. Then, we will typically discuss some system specifics and emphasize the principles and issues that play key role in their management. Offered as HSMC 412 and OPMT 412.

OPMT 420. Experiential Learning with Six Sigma Green Belt. 3 Units. The Six Sigma process is the standard for quality improvement in organizations around the globe. In this course, we study the details of the five steps in the Six Sigma process: DEFINE, MEASURE, ANALYZE, IMPROVE, and CONTROL (DMAIC). Many tools, concepts, and processes that are often an integral part of Six Sigma projects in companies are included in the course content. They range from the very basic tools of quality (such as cause-and-effect diagrams for brainstorming) to complete processes (such as benchmarking, quality function deployment, failure mode and effects analysis-FMEA). Statistical concepts with software applications that are central to Six Sigma including statistical process control and introduction to design of experiments are also included. Once the Six Sigma process and its various components are understood, we study quality management including quality control, quality planning, quality improvement, strategic quality management, and quality strategy. A major requirement of the course is an action learning component in which the students are assigned in groups to work on unpaid real projects of Six Sigma in local industries. Students meeting the required standards of performance will earn a Green Belt Certification in Six Sigma and Quality Management from the Weatherhead School of Management. Offered as OPMT 420 and SCMG 420. Prereq: (SCMG/ MSOR 433 or OPRE 433 or MBAC 511 or MBAP 403 or HSMC 457). Prereq or Coreq: (SCMG/MSOR 406 or MBAP 408 or MBAC 507 or HSMC 412) or Requisites Not Met permission.

OPMT 422. Lean Operations. 3 Units.

In this course, students will be taught how to identify inefficiencies associated with overproduction, waiting, transport, extra processing, inventory, motion and defects. One-by-one, areas of inefficiencies are to be identified and improved while educating the workforce towards continual improvement. Similarly, participants will be trained to reduce lead times in areas such as engineering design, order entry, purchasing, order fulfillment, receiving, production, packaging, shipping, invoicing and collection. The above improvements will lead to cost reductions. Students will be trained in costing techniques, target pricing, and cost maintenance. The course will be delivered along the following themes: 1) Mapping the Value Stream (current and future state) 2) Workplace Organization: 5S & Safety, 3) Defect Reduction and Error Proofing, 4) Quick Changeover, 5) Standard Operations, 6) Total Productive Maintenance, 7) Visual management, 8) One-piece flow, 9) Lean Metrics. This course is not oriented toward specialists in operations management. Its goal is to introduce you to the environments and help you appreciate the problems that operations managers are confronted with and the key issues in their management. Offered as OPMT 422 and SCMG 422. Prereg: BUAI 406B, or MBAC 507, or MBAP 408.

OPMT 450. Project Management. 3 Units.

Project management is concerned with the management and control of a group of interrelated tasks required to be completed in an efficient and timely manner for the successful accomplishment of the objectives of the project. Since each project is usually unique in terms of task structure, risk characteristics and objectives, the management of projects is significantly different from the management of repetitive processes designed to produce a series of similar products or outputs. Large-scale projects are characterized by a significant commitment of organizational and economic resources coupled with a high degree of uncertainty. The objective of this course is to enhance the ability of participants to respond to the challenges of large-scale projects so that they can be more effective as project managers. We study in detail upto-date concepts, models, and techniques useful for the evaluation, analysis, management, and control of projects. Offered as OPMT 350, OPMT 450 and SCMG 450. Prereq: MBAC 511 or MBAP 403 or HSMC 457 or HSMC 412 or Requisites Not Met permission.

OPMT 460. Supply Chain Strategy. 1.5 Unit.

Have you ever wondered what it takes to manage a successful supply chain? It all comes down to the right strategy. Supply Chain Management Strategy is the indispensable direction for managing a successful supply chain. This course reviews how organizational strategies can inform operations and supply chain strategies. Several cases in various industries are discussed to illustrate how businesses employ various supply chain business models to achieve higher efficiencies, better, quality, faster service, and subsequently promote business objectives. Offered as OPMT 460 and SCMG 460.

OPMT 470. Supply Chain Risk Management. 1.5 Unit.

A Supply Chain comprises firms, organizations, and individuals, linked through material, information, and financial flows, and whose activities enable products and services to be created and reach the consumers. Risk Management is the process of identifying risks, forecasting their impact, devising, mitigation strategies, and applying those strategies in anticipation or in response to adverse events. Supply Chain Risk Management (SCRM) is a set of solutions for identifying, measuring, preparing for, and mitigating adverse events in supply chains. As the widespread use of outsourcing is stretching supply chains further geographically and turning supply networks into intricate, global, and fragile webs, supply disruptions happen more frequently than ever and lead to substantial financial losses. A 2015 National Institute of Standards and Technology study concluded that "the likelihood that a manufacturing organization will not experience a supply chain disruption in a twenty-four month period is a mere 2%." According to research, firms that experienced supply glitches have suffered tremendous erosion in the shareholders' value (the abnormal return on stock of these companies was negative 40%). Disruptions are only one example of supply risks. From commodity price fluctuations to product adulteration, from cyber security to patent violations, from regulatory compliance to supplier bankruptcies, supply chains are rife with risks and opportunities if you know how to recognize and take advantage of them. In this course, you will learn the best industry practices and be exposed to the most current academic insights on SCRM. You will know the process for SCRM, a variety of well-known and emerging supply risks, and the unique challenges of managing each one. You will also learn advantages and disadvantages of different risk mitigation tools. You will take away a number of useful analysis tools that you can immediately apply at your job. You will know the terminology of the field, the definitions, and the "state of the art" techniques. By the end of the course, you will be able to evaluate companies' performance with respect to supply risk management, and you will be able to create, contribute to, and run a supply-risk management program at your company. Offered as OPMT 470 and SCMG 470.

OPMT 475. Global Supply Chain Logistics. 3 Units.

The course will attempt to achieve two objectives: (1) to develop your skills in solving specific types of logistics/supply chain problems, and (2) to improve your capabilities in dealing with unstructured problems of the type encountered by intermediate and top managers. Skill development is accomplished through lecturers, case studies, homework, and examinations. These skills are valuable for addressing specific problems where the given technology is useful in treating them. On the other hand, broader analytical skills are enhanced using case studies and class discussion, which allow problem solving to be placed in a larger context. Defining a framework for analysis, applying concepts and principles, and commenting on the analysis of others help to achieve the second objective. Of course, these objectives interplay throughout the course of study. Offered as OPMT 475 and SCMG 475. Prereq: (MBAP 408 or MBAC 507) and (MBAC 511 or MBAP 403) or Requisites Not Met permission.

OPMT 476A. Strategic Sourcing in Supply Chain. 1.5 Unit.

The primary purpose of the course is to provide a comprehensive introduction to supply issues in manufacturing and service organizations. Procurement and supply management has evolved as a strategic function across various industries. Recent volatility in commodity prices has further enhanced the challenges in procurement. This course explores sourcing strategies in global supply chains to reduce cost and enhance the competitiveness of the firm. This course will provide you with a framework for thinking about strategic sourcing and tools to procure commodities and services efficiently. Offered as OPMT 476A and SCMG 476A. Prereq: Not available to Master of Supply Chain Management students.

OPMT 477A. Business Forecasting. 1.5 Unit.

This course introduces nonmathematical managers to the major quantitative models designed for sound demand and system forecasting in today's complex and increasingly uncertain supply chains. Topics will also include reliability of historical data sets to forecast future patterns. The course will also cover non-quantitative tools to forecast demand for new products, services and technologies when historical data are not readily available. Emphasis is placed on a general understanding of theory, mechanics, application potential, available software packages, and templates. Offered as OPMT 377A, OPMT 477A and SCMG 477A. Prereq: MBAC 511 or MBAP 403 or requisites not met permission.

OPMT 477B. Enterprise Resource Planning in the Supply Chain. 1.5 Unit. Enterprise resource planning is the dominant system by which companies translate the needs from their customers into the detailed plans that the company must perform to meet the customer needs, and the resulting support the company will need from its suppliers. As such, it is a central player in the process of supply chain management. In this course, we study both the quantitative and qualitative concepts and techniques to help manage a company's operations to perform these important translation and planning tasks in order to help the company be successful. A major emphasis during the course is the design of processes and procedures (algorithms) for solving very complex (wicked) problems as a part of both class discussions and while working on case studies, as well as critiquing the designs so as to clearly understand their limitations. Offered as OPMT 377B, OPMT 477B, and SCMG 477B Prereq or Coreq: OPMT 477A or MBAC 518.

OPMT 478. Operational Excellence. 3 Units.

This course focuses on the essence, principles, and practices of total quality management (TQM) and Operational Excellence. Students learn management issues of identifying, analyzing, and implementing improvement projects in organizations. Topics are mostly non-quantitative with a focus on challenging aspects of quality management that students need to know beyond green belt certification such as learning to see processes better, defining quality ethically, analyzing side effects of change, and leading Kaizen, benchmarking, and brainstorming sessions. The course involves a rigorous real-world project of continuous improvement. Students will also have an opportunity to visit a local plant to get hands on experience with a real Kaizen event. Several guest talks are also scheduled to invite Black Belt professionals to discuss their experiences with quality management in Supply Chain. Offered as OPMT 478 and SCMG 478. Prereq: OPMT 420 or IIME 440.

OPMT 480. Blockchain Technology in Supply Chain Management. 1.5 Unit.

This course is intended to provide students with a solid foundation in blockchain basics and recent innovations and how this emerging technology can disrupt supply chains by addressing problems related to inefficiency, opacity, and fraud. We will cover fundamentals of blockchain technology such as distributed ledger, public key cryptography, the Bitcoin protocol, and proof-of-work consensus mechanism, as well as the Ethereum blockchain, proof-of-stake, smart contracts, oracles, layer 2 scaling solutions, and Solidity for implementing smart contracts. Furthermore, the course explores how blockchain technology can aid supply chain systems in lowering costs, ensuring product quality, enhancing speed, minimizing risks, promoting flexibility, and facilitating sustainable practices. The course also discusses various applications of blockchain technology in supply chain management, including its use in the food and beverage industry, healthcare and pharmaceutical industry, and supply chain finance. Lastly, the course highlights how combining blockchain technology with other cutting-edge technologies, such as artificial intelligence (AI), can amplify its value to supply chains. Offered as OPMT 480 and SCMG 480.

OPMT 481. Artificial Intelligence for Business Management. 1.5 Unit. In an era marked by rapid technological advancements and an abundance of data, the role of Artificial Intelligence (AI) in transforming business practices has become pivotal. This course aims to demystify AI and elucidate its rapidly growing influence in the business world. We will cover the fundamentals of AI, its practical applications in various business sectors, and the strategic integration of AI in business processes. Throughout this course, students will delve into the core technologies underpinning AI, including deep learning, computer vision, natural language processing, and generative AI, and explore how these technologies are revolutionizing marketing, finance, accounting, operations, supply chain management, and customer relations. The course also provides a high-level overview of how AI is employed in decision-making and improving business operations. Furthermore, the course addresses the crucial aspects of ethics, legal compliance, and societal impacts of AI implementation in business. By exploring case studies and real-world applications, students will gain a nuanced understanding of the opportunities and challenges presented by AI in the business context. This course requires no coding background and is tailored for management and business students. Familiarity with basic statistical methods (e.g., linear regression) is needed. Offered as OPMT 481 and SCMG 481. Prereq: MBAC 511 or MBAP 403 or SCMG 433 or BUAI 433.

OPMT 491. Revenue Management. 3 Units.

This course will focus on the theories and applications of data techniques to analyze demand models, and use optimization techniques to inform strategic decision making upon pricing and revenue management problems. The key ingredients of the class include the use of sophisticated data and optimization tools towards: - Mastering static and dynamic demand models - Understanding consumer choice behaviors - Understanding and formulating firm policies based on price response - Creating optimization toolkits for organizational decision making - Understanding and formulating competitive response The course is "tools agnostic" - you are welcome to use any of the available software packages (like MS Excel, Stata, SPSS) and programming languages (like R, Python or Matlab). Offered as OPMT 491 and SCMG 491. Prereq: (SCMG 433 or BUAI 433 or MBAC 511 or MBAP 403 or OPRE 207) and (SCMG 406 or BUAI 406B or MBAP 408 or OPRE 301 or MBAC 507).

OPMT 501. Special Problems and Topics. 1 - 18 Units.

This course is offered, with permission, to students undertaking reading in a field of special interest.

Operations Research (OPRE)

OPRE 207. Statistics for Business and Management Science I. 3 Units. Organizing and summarizing data. Mean, variance, moments. Elementary probability, conditional probability. Commonly encountered distributions including binomial. Poisson, uniform, exponential, normal distributions. Central limit theorem. Sample quantities, empirical distributions. Reference distributions (chi-square, z-, t-, F-distributions). Point and interval estimation: hypothesis tests. Prereq: MATH 121 or MATH 125.

OPRE 301. Operations Research and Supply Chain Management. 3 Units. Operations research (OR) or management science, is the discipline of applying advanced quantitative methods to make better decisions. Techniques covered include linear programming, queuing models and simulation. The second part of the course focuses on how OR tools are used in managing various aspects of Supply Chain. Topics covered include demand forecasting, design of distribution systems, capacity planning, and inventory management. Recommended preparation: one semester of statistics or consent of instructor. Prereq: OPRE 207.

OPRE 332A. Spreadsheet and Business Process Simulation - I. 1.5 Unit. Computer simulation is a process of designing and creating a computer model (vedio game) that mimics an existing or proposed system so as to better understand the behavior of the system. Many studies have shown that in industry, simulation is most frequently used Operations Research tool due to its ability to deal with complex systems. Another reason for the recent popularity of simulation is the availability of specialized software with animation capabilities. This course is designed to give students basic ideas of simulation methodology with the aid of popular simulation software. The emphasis of the course is in simulating business processes, however, the versatility of the technique will be demonstrated with applications from finance, health care, etc. The main focus of the course is on building simulation models using state of the art software (@RISK and ARENA). The grading is based on weekly homework and final exam. Offered as OPRE 332A, OPRE 432A, and SCMG 432A. Prereg: OPRE 301.

OPRE 332B. Spreadsheet and Business Process Simulation - II. 1.5 Unit. Computer simulation is a process of designing and creating a computer model (video game) that mimics an existing or proposed system so as to better understand the behavior of the system. Many studies have shown that in industry, simulation is most frequently used Operations Research tool due to its ability to deal with complex systems. Another reason for the recent popularity of simulation is the availability of specialized software with animation capabilities. This course is designed to give students basic ideas of simulation methodology with the aid of popular simulation software. The emphasis of the course is in simulating business processes, however, the versatility of the technique will be demonstrated with applications from finance, health care, etc. This course builds on 332A/432A (where the main emphasis was to build simulation model using @RISK and ARENA) and focuses on statistical ideas and tools needed in building, analyzing and experimenting with these models. Offered as OPRE 332B, OPRE 432B, and SCMG 432B Prereq: OPRE 301. Prereq or Coreq: OPRE 332A.

OPRE 427. Convexity and Optimization. 3 Units.

Introduction to the theory of convex sets and functions and to the extremes in problems in areas of mathematics where convexity plays a role. Among the topics discussed are basic properties of convex sets (extreme points, facial structure of polytopes), separation theorems, duality and polars, properties of convex functions, minima and maxima of convex functions over convex set, various optimization problems. Offered as MATH 327, MATH 427, and OPRE 427. Prereq: MATH 223 or consent of instructor.

OPRE 432A. Spreadsheet and Business Process Simulation - I. 1.5 Unit. Computer simulation is a process of designing and creating a computer model (vedio game) that mimics an existing or proposed system so as to better understand the behavior of the system. Many studies have shown that in industry, simulation is most frequently used Operations Research tool due to its ability to deal with complex systems. Another reason for the recent popularity of simulation is the availability of specialized software with animation capabilities. This course is designed to give students basic ideas of simulation methodology with the aid of popular simulation software. The emphasis of the course is in simulating business processes, however, the versatility of the technique will be demonstrated with applications from finance, health care, etc. The main focus of the course is on building simulation models using state of the art software (@RISK and ARENA). The grading is based on weekly homework and final exam. Offered as OPRE 332A, OPRE 432A, and SCMG 432A. Prereq: MBAP 403 or MBAC 511.

OPRE 432B. Spreadsheet and Business Process Simulation - II. 1.5 Unit. Computer simulation is a process of designing and creating a computer model (video game) that mimics an existing or proposed system so as to better understand the behavior of the system. Many studies have shown that in industry, simulation is most frequently used Operations Research tool due to its ability to deal with complex systems. Another reason for the recent popularity of simulation is the availability of specialized software with animation capabilities. This course is designed to give students basic ideas of simulation methodology with the aid of popular simulation software. The emphasis of the course is in simulating business processes, however, the versatility of the technique will be demonstrated with applications from finance, health care, etc. This course builds on 332A/432A (where the main emphasis was to build simulation model using @RISK and ARENA) and focuses on statistical ideas and tools needed in building, analyzing and experimenting with these models. Offered as OPRE 332B, OPRE 432B, and SCMG 432B Prereq: MBAP 403 or MBAC 511. Prereq or Coreq: OPRE 432A.

OPRE 433. Statistical Data Analytics for Supply Chain. 3 Units. Data of many kinds are typically available in practice, but the challenge is to use those data to make effective professional decisions. This software-intensive course begins with useful descriptions of data and the probability theory foundation on which statistics rests. It continues to statistics, including the central limit theorem, which explains why data often appear to be normally distributed, and the Palm-Khintchine theorem which explains why data often appear to have a Poisson distribution. The remainder of the course focuses on regression and forecasting, including detecting and overcoming some of the deadly sins of regression, and the surprising flexibility of regression models. Recommended preparation: One semester of undergraduate calculus or consent of instructor. Offered as OPRE 433 and SCMG 433.

OPRE 454. Analysis of Algorithms. 3 Units.

This course covers fundamental topics in algorithm design and analysis in depth. Amortized analysis, NP-completeness and reductions, dynamic programming, advanced graph algorithms, string algorithms, geometric algorithms, local search heuristics. Offered as CSDS 410 and OPRE 454. Prereq: OPRE 435A and OPRE 435C.

OPRE 490. Independent Study in Operations Research. 1 - 15 Units. This course is offered, with permission, to students undertaking reading in a field of special interest.

OPRE 501. Special Problems and Topics. 1 - 36 Units.

This course is offered, with permission, to students undertaking reading in a field of special interest.

Organizational Behavior (ORBH)

ORBH 230. The Mindset and Skills of Effective Teamwork. 3 Units. It is no exaggeration to say that we have been working in teams throughout the history of humankind. But it is important that we not equate experience with expertise. There is an enormous body of literature on the science of teamwork, yet most individuals have never had any formal training or feedback on their teamwork skills in a workplace setting. We know that this lack of formal education and training on effective workplace teamwork is detrimental to our future success. While more than 90% of employees in a variety of settings report that teamwork is critical to the success of their organization, fewer than 25% of them believe that their teams are effective. Many of them acknowledge that they lack the knowledge and skills required to improve the effectiveness of their teams. Based on the science of teamwork, in this course you will learn the mindset, knowledge, skills, and attitudes that are essential for effective teamwork while completing an authentic and meaningful, campus-based team project. We will focus on individual- and teamlevel attributes that are important for effective teamwork, including self-reflection, self-regulation, curiosity, vulnerability, interpersonal communication, project management, team leadership, giving and receiving deconstructive feedback, conflict management, and negotiation skills. We will use a variety of educational formats, including independent study, self-reflection, small group discussions and exercises, team challenges, large group discussions and debriefs, individual and team written assignments, experiential learning, and team presentations. As a communication-intensive course, students will use writing and other forms of communication to enhance their learning of the course content. Students will also use writing and other forms of communication to engage with course topics and questions in ways that demonstrate their growing participation in academic inquiry and knowledge making. Counts as a Communication Intensive course.

ORBH 240. Ethics for the Real World: Developing a Code of Ethics to Guide Decisions in Work and Life. 3 Units.

This seminar addresses two major questions: (1) How do the contexts of our lives affect ethical behavior? and (2) How can we develop our character to manage ethically compromising personal and organizational challenges, while being authentic? Using experiential methods, reflective writing, and dialogue to help students discover individual ethical principles guiding behavior. We examine legacies from religion, spiritual teaching, and cultural upbringing (family, schools, friends, community, and nation), and moral philosophy to explore important personal values to build leadership character. These serve as standards of behavior to help decision-making in difficult contexts. With a focus on values and virtues, the course helps students think about the type of person they want to be and the sort of world they want to help create. Included are practical exercises for development of a code of ethics, an iterative process articulating principles of moral construction. These can serve as a foundation for character development, integrity, and moral courage for ethical decision-making to confidently address challenges throughout life. Counts as a Communication Intensive course. Counts as a Human Diversity & Commonality course. Counts as a Moral & Ethical Reasoning course. Prereq: Academic Inquiry Seminar (AIQS) or SAGES First Seminar.

ORBH 250. Leading People: The Practice, Theory, and Reality of Leadership (LEAD I). 3 Units.

The principal goals of this course are to help students learn about leaders and the real-world context in which they function, gain self-awareness of their own leadership vision and values, understand the options they have for careers in management based on their own aptitudes, orientations and expertise, and develop the fundamental skills needed for success in a chosen career. Through a series of case studies, experiential activities, assessment exercises, group discussions, meeting leaders, and peer coaching, the course helps students understand the practice, theory, and reality of leadership in today's organizations, formulate their own career and life vision, assess their skills and abilities, and design a development plan to reach their objectives. The course enables students to see how effective leadership contributes to organizational performance and the production of value, and how for many organizations, effective leadership is the driver of competitive advantage. Credit for at most one of ORBH 250 and ORBH 396 can be applied to hours required for graduation. Prereg: Sophomore standing and an Academic Inquiry Seminar (AIQS) or SAGES First Seminar.

ORBH 251. Leading Organizations (LEAD II). 3 Units.

The principal goal of this course is to help students enhance their leadership skills by understanding how organizations function through the lenses of structure, culture, and power/politics. The course enables students to discern how leaders function effectively as they integrate goals, resources and people within these constraints. Students learn about these organizational lenses while developing their own leadership and professional skills. Prereq: ORBH 250 or ORBH 396 and at least Sophomore standing.

ORBH 303. Developing Interpersonal Skills for Leading. 3 Units.

This course is designed for students who want to increase their understanding of interpersonal and team dynamics. It will help you build more open and effective relationships and improve your ability to cooperate with and lead others unlike you--whether from biology or life history-to work effectively in today's increasingly team-oriented organizations. The emphasis of this course is on learning about oneself in the context of others, learning about diverse others, and using these insights to facilitate growth in skills in the groups you lead. The course revolves around student-led conversations, courageous expression of needs and concerns, and written reflections. Listening is valued as highly as speaking. Due to its many opportunities to be exposed to others' experiences, views, and needs, this course satisfies the Human Diversity and Commonality Perspective Requirements of the GER. Counts as a Human Diversity & Commonality course. Prereq: At least sophomore standing.

ORBH 310. The Art and Science of High-Functioning Teams. 3 Units. Welcome to "The Art and Science of High-functioning Teams"! In this course you will practice and learn how to contribute to a team effectively, while being mindful of building meaningful human relationships. This is a key life skill for building and contributing to the teams that you will encounter as you pursue collective efforts at work, school, and in your home and community. Although teamwork is a ubiquitous part of our everyday lives, many of us know little about the strategy and psychology of effective teamwork. This is an introductory course on teamwork, or on the art and science of integrating the efforts of diverse parties to produce some meaningful collective outcome. Understanding your own teamwork style and what drives others is essential for success in teamwork. This kind of knowledge can only be gained through experience and this course provides a series of simulations and debriefings that address a variety of influences and processes in teamwork. Each simulation has been chosen to highlight the central concepts that underlie the art and science of high-functioning teamworks. You will also learn about the practice of high-functioning teamwork in the real-world through engagement with communities beyond the classroom to understand how teamwork provides for societal and collective responsibility. Counts as a Local & Global Engagement course.

ORBH 320. History of Labor & Unions in Business & Society; What Executives Need to Know to Manage Effectively. 3 Units.

This course will explore the history of work and "what unions do" from colonial times to the present with the focus on the evolution of labor and industry in America. Perspectives on work, worker organizations, employers, and the response of large industrial entities in historical and contemporary contexts, will be considered as these perspectives were shaped by immigrant status, race, ethnicity, religious views, as well as local and global economic, political, and social factors. The course is designed to provide students the knowledge and tools needed to manage effectively and collaboratively with unions. Themes include "Who Built America," a history of laboring people in America, the organization of workers and accompanying management ideologies, the relationship of unions to productivity and Democratic processes. We will study how immigrant organizations, established Churches, and local political parties reacted to early union organizing movements as well as the reaction of political and industrial elites. Readings and discussions will also cover the sources and forms of conflict between workers and employers, changes in technology, production, and workplace organization in an emerging market and capitalistic society. Students will consider the impact of immigration, racism and sexism in the labor movement and diverse types of unions and worker associations formed during select periods in American history. Throughout the course we will revisit the on-going debate over the goals and purposes of unions and best ways to manage the organizational and political processes associated with unionization. Students will study how labor unions were and are affected by an international economy as well as how working people and their unions impacted and shaped society and political processes through sometimes mutual (and often antagonistic) interaction. We will look at how the labor movement's ability to improve their members' living standards and working conditions widely fluctuated throughout history. Students will have an opportunity to engage with local unions and union management organizations to study contemporary local and global questions and controversies surrounding police unions, those representing Amazon or Starbucks employees, and the actions of unions in entertainment or sports industry. We will revisit best practices; essential for those who will eventually manage in industry, international corporations, arts and education, and the non-profit world, to work empathetically, collaboratively, and efficiently with unionized employees. The course includes actual local engagement with unions and union members. Offered as HSTY 327 and ORBH 320. Counts as a Local & Global Engagement course.

ORBH 325. Human Resource Management: Managing Talent for More Effective Outcomes. 3 Units.

This course introduces the art and science of managing people to enable them to function effectively in social systems! We will look at how to recruit, assess and retain talented individuals, how to assess the value of a position, how to obtain what you are worth, how to interview for and obtain jobs, and how to manage disciplinary challenges at work. This course will assist future leaders understand how an effective human resources strategy contributes to individual, organizational, and societal good. Students will discuss emerging trends in human resource management (HRM) and what future managers and leaders can do to ensure an inclusive approach resulting in positive and measurable outcomes. Topics will include how to evaluate and negotiate compensation, how organizations determine what a job is worth, recruitment and selection, best practices to interview prospective employees, how to handle problem employees, labor management relations, negotiating with unions, how employers assess performance, managing people working in international companies, and how the HRM function helps leaders execute the organization's strategy to enable employees and organizations to maximize personal and organizational growth.

ORBH 330. Quantum Leadership: Creating Value for You, Business, and the World. 3 Units.

This course is designed to help you develop your leadership skills and capabilities aimed at flourishing, defined as "to grow well, to prosper, to thrive, to live life to the fullest." It emphasizes the growing desire for wellbeing through practices that cultivate the self, and for a better understanding of the social, ethical, and global choices facing business. One such choice is whether to focus a company's for-profit activities only on "doing less harm", or to choose to also pursue "making a positive impact" through activities that increase prosperity, improve wellbeing, and regenerate nature. Other such choices are critically examined during the semester. The goal is changing who leaders are being, not only what they are doing, through daily practices that increase their awareness of how their actions impact others and the world. Through the course, students experiment with a variety of practices in an action learning process that allows them to experience a greater connection to self, others, and nature. Recent research shows that such direct-intuitive practices support personal wellbeing, team collaboration, and corporate citizenship behavior as part of an upward spiral in leadership effectiveness and life satisfaction. The most exciting aspect of this class is encouraging students to see themselves as positive change agents, with the ability to make a positive impact on the world through living their most fulfilling and flourishing selves. Offered as ORBH 330 and ORBH 430. Counts as a Full-Semester Wellness/Non-movement course. Counts as a Moral & Ethical Reasoning course.

ORBH 360. Independent Study. 1 - 6 Units.

This course is set up individually upon conference between student and Organizational Behavior faculty member designed in consult with the student's advisor if necessary in order to engage and challenge student with topics in organizational behavior.

ORBH 375. Building Leadership Character: Ethics in Action. 3 Units.

The course engages students in moral and ethical reasoning, examining effective ethical leadership in different contexts, across cultures, within organizations, and individuals. It draws on theories of virtue ethics, deontological ethics, utilitarian ethics, relational ethics, and indigenous wisdom. Students reexamine their own ethical character, cultural values, and social consequences of choices through dialogue, feedback, reflection, and action as they engage in a self-reflective journey to develop ethical astuteness for personal and organizational benefit. Uses cases involving ethical crises and ethical leadership examples from across the world. Counts as a Communication Intensive course. Counts as a Moral & Ethical Reasoning course. Counts as a Understanding Global Perspectives course. Prereq: Sophomore standing and an Academic Inquiry Seminar (AIQS) or SAGES First Seminar.

ORBH 380. Managing Negotiations. 3 Units.

In this course you will practice and learn how to negotiate effectively, while being mindful of building meaningful human relationships. This is a key life skill for dealing with the relationships you will navigate everyday for the rest of your life, with potential employers, coworkers, roommates, landlords, parents, bosses, merchants, service providers, etc. Although negotiations are a ubiquitous part of our everyday lives, many of us know little about the strategy and psychology of effective negotiations. Why do we sometimes get our way, while at other times we walk away feeling frustrated by our inability to achieve the agreement we desire? This is an introductory course on negotiations, or on the art and science of securing agreements between two or more parties who are interdependent and who are seeking to maximize their outcomes. Understanding your own negotiation style and what drives others in negotiations is essential for success at negotiating. This kind of knowledge can only be gained through experience and this course provides a series of simulations and debriefings that address a variety of bargaining processes in the contexts of deal making and dispute resolution. A central thread across the negotiation simulation experience is the ethical character that you will exercise and develop over time; our planning and execution of negotiation strategy will take into account virtue ethics and character strengths. By the end of these experiences, students will be able to identify and evaluate moral and ethical aspects of the interpersonal bargaining and conflict management situations they will face. Counts as a Full-Semester Wellness/Non-movement course. Counts as a Moral & Ethical Reasoning course. Prereq: At least sophomore standing.

ORBH 391. Leadership in Diversity and Inclusion: Towards a Globally Inclusive Workplace. 3 Units.

This course addresses workforce diversity issues from individual, group, and organizational perspectives. The focus is on innovative ways of utilizing today's culturally expanding workforce. Emphasis is on the "what and how" for managers in developing a corporate culture that embraces diversity, helping them in learning to work with, supervise and tap the talent of diverse employees within their organizations. Included are methods for modifying systems to attract, retain, develop, and capitalize on benefits of the new workforce demographics. Offered as ORBH 391 and WGST 391. Counts as a CAS Global & Cultural Diversity course. Counts as a Human Diversity & Commonality course.

ORBH 403. Developing Interpersonal Skills for Managers. 3 Units. This course is intended to sharpen students' skills in the art of relating successfully to other individuals and groups. The course uses an intensive group experience to make students more aware of how their actions affect others, more capable of giving and receiving interpersonal feedback, and more cognizant of processes through which groups work. Several Saturday classes.

ORBH 412. Leading Organizational Change. 3 Units.

This course is designed to advance your skills in leading organizational change. The course will improve your understanding and skills in leading positive change in groups and organizations, and on how to create, foster and manage organizations in which people thrive and perform at their best. The course helps you develop strategies, approaches, and mindsets that help you to create a high-performance culture. The course helps you to drive transformation and foster inclusive, sustainable change, to empower others in your organization to unleash their leadership potential. We will particularly adapt a strength-based approach, a systematic search for those capacities and processes that strengthen a human system. The core question that we will seek to address is: how can we create and lead human systems that are as intelligent as its members? Our learning approach will involve not only readings and lectures, but also active inquiry. The rationale for this approach is simple -- leading organizational change is an active and non-linear process that is accomplished with others and requires an understanding of non-traditional models. The purpose of this course is to appreciate the dynamics of leading change in complex systems. The course will increase your capacity to diagnose complex human systems and understand the dynamics by which teams and organizations learn and change. This course is both philosophical (i.e., reflective) and practical. It is philosophical in the sense that you will be encouraged to think about implicit assumptions regarding human nature and how organizations function and you will be challenged to expand some of these theories. It is practical in the sense that emphasis will be placed on strategies and technologies for diagnosis and planning. Organizations are a combination of structures, values, processes, and relationships that bring people together to achieve a common goal. However, organizations do not operate in isolation--they are embedded in complex social, political and financial contexts. Effective leadership requires the ability to discern and balance competing demands and tensions that are inherent in organizations. This course provides an overview of organizational theories to help leaders understand and be successful in these contexts. By looking at organizations through metaphorical lenses, such as machines, brains, and organisms, students learn how to create new options for organizational success in everchanging operating environments. We will use theories and case studies to develop insights and innovative approaches to organizational change. Your final deliverable will be the creation of a plan to map out your capstone applied research project. The fields of organization development and human systems change are going through a theoretical metamorphosis in which change has become much less about detection of error, analysis of chronic problems, or exclusive treatment of what is deficient, broken or missing. Like the exciting shift in medicine from antibiotics to pro-biotics or the movement in psychology from analysis of dysfunctions to examination of human strengths, the field of organization and management theory finds itself in the midst of a positive revolution in change. This shift is elevating and extending our images of what it means to organize, what it means to transform organizations, and what it means to be a change leader or change agent. Cameron, Dutton, and Quinn (2003) have framed this move as an "exciting new field of study in the organizational sciences"--the field of "positive organizational scholarship." This course is designed to advance your understanding and skills in leading strength-based change and on how to create, foster and manage organizations in which people thrive and perform at their best. Key Learning Objectives: 1. To understand the human dimensions of change management. 2. To review best practices in managing organizational change with particular focus on overc

ORBH 413. Economics of Negotiation and Conflict Resolution. 3 Units.

Students frequently enroll in a negotiation class with one thought in mind--negotiating a better job offer from an employer. They soon learn, however, that negotiation skills can do far more than improve a paycheck. Negotiations occur everywhere: in marriages, in divorces, in small work teams, in large organizations, in getting a job, in losing a job, in deal making, in decision making, in board rooms, and in court rooms. The remarkable thing about negotiations is that, wherever they occur, they are governed by similar principles. The current wave of corporate restructuring makes the study of negotiations especially important for M.B.A.s. Mergers, acquisitions, downsizing and joint ventures call into question well established business and employment relationships. Navigating these choppy waters by building new relationships requires the negotiation skills that you will learn in this class. Offered as ECON 431 and ORBH 413.

ORBH 430. Quantum Leadership: Creating Value for You, Business, and the World. 3 Units.

This course is designed to help you develop your leadership skills and capabilities aimed at flourishing, defined as "to grow well, to prosper, to thrive, to live life to the fullest." It emphasizes the growing desire for wellbeing through practices that cultivate the self, and for a better understanding of the social, ethical, and global choices facing business. One such choice is whether to focus a company's for-profit activities only on "doing less harm", or to choose to also pursue "making a positive impact" through activities that increase prosperity, improve wellbeing, and regenerate nature. Other such choices are critically examined during the semester. The goal is changing who leaders are being, not only what they are doing, through daily practices that increase their awareness of how their actions impact others and the world. Through the course, students experiment with a variety of practices in an action learning process that allows them to experience a greater connection to self, others, and nature. Recent research shows that such direct-intuitive practices support personal wellbeing, team collaboration, and corporate citizenship behavior as part of an upward spiral in leadership effectiveness and life satisfaction. The most exciting aspect of this class is encouraging students to see themselves as positive change agents, with the ability to make a positive impact on the world through living their most fulfilling and flourishing selves. Offered as ORBH 330 and ORBH 430. Counts as a Full-Semester Wellness/Non-movement course. Counts as a Moral & Ethical Reasoning course.

ORBH 450. Executive Leadership. 3 Units.

The purpose of this course is to help students understand the current theories and effective practices of executive leadership, and through this understanding, to help enhance their own leadership practices and capabilities. We will examine the methods, challenges, trade-offs, and frontiers of executive leadership through application of leadership concepts to actual case studies. Student teams will identify and conduct at-a-distance and in-depth projects studying executive leaders. The course aims at answering guestions such as: Who are leaders? Are leaders different from managers? How do the most effective leaders think and act? What are the recent trends in the practices of executive leadership? What competencies do leaders need to lead in a complex, global, and interdependent world? What situations create leaders or foster their emergence? How are leaders developed? What makes us want to follow leaders? How can executive leaders most effectively relate with their teams and stakeholders? How do leaders engage positively with their authority, power, and influence? What are the personal costs of being a leader?

ORBH 451. Alternative Dispute Resolution. 3 Units.

Students will examine the processes of alternative dispute resolution (ADR) through reading materials, videotapes, guest lectures, and simulation exercises. Particular emphasis will be given to the interaction of lawyers and clients in business negotiations and in litigation. Negotiation, arbitration, mediation, and the mini-trial will be examined. The class will also cover impediments to ADR, such as lack of understanding or hostility on the part of clients or lawyers.

ORBH 460. Women in Organizations. 3 Units.

This course addresses important leadership and management issues concerning women in organizations. The course provides complex understandings of issues pertinent to professional women and work such as sex role typing, sex-based discrimination, equal pay, sexual harassment, work-family balance, women's leadership and women's career issues and development. The course helps students increase selfknowledge about their own values and practices as well as enhance their capabilities as leaders and managers. We will examine the opportunities, challenges, trade-offs, and organizational dynamics experienced by women in work settings, as well as the interpersonal, organizational, and societal structures and processes impacting women in organizations. Through a variety of course methods, students gain greater awareness of the gendered nature of work and organizations and learn effective strategies for women's career progress and effective participation in organizations.

ORBH 501. Special Problems and Topics. 1 - 18 Units.

This course is offered, with permission, to students undertaking reading in a field of special interest.

ORBH 510. Organizational Behavior Department Seminar. 1.5 Unit.

The OB Department Seminar is organized and managed by the first year PhD students. Seminar sessions will alternate between first year meetings and gatherings of the ORBH community of students, faculty and friends. Community sessions will be organized around research presentations of PhD Qualifying Papers, Dissertation Proposals and Dissertation Defense. Seminar Objectives: 1. To create and sustain an appreciative, intellectually nourishing learning space for the ORBH community that will support, inspire and empower us to explore the frontiers of scholarship in our field; 2. To provide a forum for sharing the ongoing research and scholarship of the department; 3. To develop productive collaborative research relationships; 4. To increase our collective knowledge of the current state of the art in OB and to develop productive collaborative research relationships; 4. To increase our collective knowledge of the current state of the art in OB and related fields.

ORBH 511. Micro Organizational Behavior. 1.5 Unit.

Examines the field of micro-organizational behavior. Specifically, the study of individuals and groups within an organizational context and the study of internal processes and practices as they affect individuals and groups. Major topics include individual characteristics such as beliefs, values and personality. Individual processes such as motivation, emotions, commitment, group and team processes, such as decision-making; organizational processes and practices such as goal setting, performance appraisal and rewards, and the influence of all of these on such individual, group and organizational outcomes as performance, job satisfaction, citizenship behaviors, turnover, justice, absenteeism and employee engagement.

ORBH 513. Appreciative Inquiry and Strength-Based Change. 1.5 Unit.

This course explores and develops the art of understanding social systems in ways that help us imagine, design and develop organization excellence. It seeks to show how many of our conventional ideas about organizations are based on discourse and metaphors that lead us to see and understand organizations in partial and often limiting ways. Growing research from the domains of Positive Psychology and Positive Organization Scholarship and the theory and practice of Appreciative Inquiry will be explored to show how we can create new and more positive, strength-based ways of designing and developing social systems.

ORBH 516. The Scholarship of Coaching. 1.5 Unit.

Coaching is a helping relationship in which one person assists another with change with respect to a person's behavior, attitudes, mental models, dreams of the future, etc. The popularity of the practice of coaching began to dramatically increase at least 20 years before scholars designed studies to test its efficacy. In this course, we will examine scholarly work in the coaching domain that has emerged. Prereq: Limited to ORBH PhD students only.

ORBH 520. Group and Interpersonal Analysis. 1.5 Unit.

This course is a review of major concepts and research in group dynamics and interpersonal relations. Topics concern face-to-face social interaction such as communication patterns, power, hierarchy, leadership, norms, goals, productivity, social theories of personality, and personal change through group methods. The course combines cognitive emphasis and personal experience-based learning.

ORBH 523. Design for Sustainable Value. 1.5 Unit.

The relationship between business and society--and the search for mutually beneficial advances between industry and the world's most pressing global issues--has become one of the defining issues of the 21st century. Throughout the world, immense entrepreneurial energy is finding expression, energy whose converging force is in direct proportion to the turbulence, crises, and the call of our times. Factories and buildings are being designed in ways that, surprisingly, give back more clean energy to the world than they use. Bottom-of-the-pyramid strategies and micro-enterprise models are demonstrating how business can eradicate poverty through profitability. Companies are designing products that leave behind no waste--only "food" that becomes input into their biological or technological cycles. And macrowikinomics--everything from telepresence to megacommunity--is rebooting our capacity for human cooperation and global action. Prereq: Limited to ORBH PhD students only.

ORBH 525. Leading Change from a Complexity Perspective. 1.5 Unit. Change is an enigma and yet sustained, desirable change (SDC) drivers adaptation, growth and life itself. In this course, we will continuously attempt to answer two questions: (1) What is the process of sustained, desirable change? and (2) What is the role of a leader, including their emotional and social intelligence? Concepts from complexity theory will be used, as well as case studies and longitudinal studies including understanding the multilevel nature of SDC at the individual, dyad, team, organization (including family business), community, country, and global levels. Intentional Change Theory (ICT) will be used as the organizing concept for the changes studied. Prereq: Limited to ORBH PhD students only.

ORBH 528. The Dynamics of Managing Effective Change. 1.5 Unit.

This course explores and develops an understanding of how individuals actually effect positive change and outcomes within an organization without the requisite authority or decision making power to do so. It seeks to show how managing a change process appears to follow a path of cumulative activities that in time produce a punctuated equilibrium-one that triggers a step up in performance. Such activities seem to be small episodes or learning cycles geared at converting inert knowledge into action; increasing awareness; reinforcing accountability, and/or attaining results. These findings will be compared and contrasted to existing change models and theories. Prereq: Limited to ORBH PhD students only.

ORBH 533. The Practice Turn in Organizational Research. 1.5 Unit.

In this course, doctoral students will develop an understanding of the role of practice and performativity in organizing. This involves exploring the link between doing and thinking by and between individuals in an effort to address larger issues of group- and organizational-level behavior. Students will examine elements of human behavior in organizational endeavors such as embodied cognition, and the enactment of structures and routines. Methods of "capturing" practice in organizing will also be discussed. By the end of the course, students will be expected to articulate how the practice perspective relates to their own research interests and future projects. Prereq: Limited to ORBH PhD students only.

ORBH 538. Research and Theory on Dynamical Behavior in Groups. 1.5 Unit.

This seminar exposes student to a variety of conversations in the study of group dynamics. Major topics include work on commons dilemmas, communal and exchange relationships, social facilitation, social loafing, social combination, and social creativity drawing deeply on our historical roots. It will also focus on current topical issues such as demographic faultlines, transactional memory, and issues of time and transition. Prereg: Limited to ORBH PhD students only.

ORBH 540. Social Exchange, Social Networks, and Social Capital in Organizations. 1.5 Unit.

In this course we will examine the nature of social exchange relationships in organizations. We will explore how individual perceptions regarding the quality of the relationship they have with their immediate supervisor, their work group, and the organization as an entity can impact their workplace attitudes and behaviors. Additionally, we will learn how the examination of networks of relationships can enhance our understanding of how individuals experience organizational life. The course will also provide a brief introduction to the theory, methods and procedures of social network analysis with an emphasis on applications to individual and organizational social capital.

ORBH 541. Organizational Systems. 1.5 Unit.

This course covers the use of general systems theory as a conceptual base for examining organizations from the macro-perspective. The course examines organizational structure and technology, organizations and interorganizational networks in interaction with their societal environments, and large-scale problems of organizational and social power, conflict and change. It is designed to present a large-scale perspective on organization theory and behavior that is complementary to the micro-perspective of organizational behavior.

ORBH 560. Research Methods I. 3 Units.

This course concerns itself with issues associated with the conduct of social research. The primary focus is on learning the "craft" of research and its associated technologies. Among the topics that are addressed are: scientific method; research terminology and definitions; search design; laboratory experiments; simulations; field experiments; field studies; measurement, reliability and validity; and sampling. This course is intended to help students acquire the skills necessary in undertaking dissertation-related research.

ORBH 565. Research in Gender and Diversity in Organizations. 1.5 Unit. This course will provide a full range of feminist research methods exploring relationships between feminism and methodology involving a plurality of perspectives for conducting research and creating knowledge with an emphasis on collecting and interpreting qualitative materials. Particular attention is paid to understanding gender and diversity related phenomenon that occurs in the workplace. Classic feminist research from a variety of historical, societal, economic, interpersonal and organizational paradigms are incorporated. Coreq: ORBH doctoral students only.

ORBH 570. Learning and Development. 1.5 Unit.

This course provides an exploration of the learning and development paradigm underlying the human potential development approach to human resource development. The origins of this approach in the naturalist epistemologies John Dewey's pragmatism, Kurt Lewin's gestalt psychology, the work of James, Follett, Emerson, Piaget, Maslow, Rogers, and others and current research in adult development, biology and brain/ mind research, artificial intelligence, epistemology, moral philosophy and adult learning will be considered. The course will focus on applications of these ideas to current issues in human resource development such as adult learning in higher education, advanced professional development, and large system learning and development. Coreq: ORBH doctoral students only.

ORBH 601. Special Problems and Topics. 1 - 18 Units.

This course is offered, with permission, to candidates undertaking reading in a field of special interest.

ORBH 701. Dissertation Ph.D.. 1 - 9 Units.

(Credit as arranged.) Prereq: Predoctoral research consent or advanced to Ph.D. candidacy milestone.

Management Policy (PLCY)

PLCY 399. Business Policy. 3 Units.

This course uses case analysis to develop perspective and judgment on business problems through the integration of functional areas. Formulation, development, and implementation of organization goals and policies, the development of strategy in relation to the competitive environment, and applications of quantitative and behavioral decisionmaking techniques are examined. Prereq: Senior standing.

PLCY 501. Special Problems and Topics. 1 - 18 Units.

This course is offered, with permission, to students undertaking reading in a field of special interest.

Supply Chain Management (SCMG)

SCMG 400. Linear Algebra. 1 Unit.

The objective of this one-credit hour course is to provide a basic working knowledge of material in linear algebra that is relevant to the Master of Supply Chain Management and Master of Business Analytics & Intelligence programs. This background material includes geometric and algebraic properties of vectors and matrices together with operations that can be performed on them. The use of vectors and matrices in solving systems of linear equations is taught. Offered as BUAI 400 and SCMG 400. Prereq: For Master of Supply Chain Management students only.

SCMG 406. Operations Management. 3 Units.

Operations managers, ranging from supervisors to vice presidents, are concerned with the production of goods and services. More specifically, they are responsible for designing, running, controlling and improving the systems that accomplish production. This course is a broad-spectrum course with emphasis on techniques helpful to the practice of management at the analyst level. Its goal is to introduce you to the environments, to help you appreciate the problems that operations managers are confronted with, and provide you with the tools to address these problems. Operations Management spans all value-adding activities of an organization including product and process design, production, service delivery, distribution network and customer order management. As global competition in both goods and services increases, a firm's survival depends upon how well it structures its operations to respond quickly to changing consumer needs. Thus, it is essential for all business managers to acquire an understanding of operations management to maintain their competitive advantage. This course provides students with the basic tools needed to become an analyst in Supply Chain and Operations Management. This course provides an overview of Process analysis, Capacity management, Queuing system, analysis, Forecasting, Quality management, Material Requirements planning, Inventory management, and Supply Chain management. The emphasis of the course is on both real world applications and technical problem solving. Several manufacturing and non-manufacturing environments will be discussed explicitly, like health care, insurance, hotel-management, airlines and government related operations. Also we will explore the interface of operations management with other functional areas such as marketing, finance, accounting, etc. This coursework includes individual and group assignments, case analyses and experiential learning through simulations and educational games. Prereq: For Master of Supply Chain Management students only.

SCMG 411A. Optimization Analytics for Supply Chain. 1.5 Unit.

The objective of this course is to enable you to use mathematical models to help make better decisions for organizations, which a goal of the Master of Supply Chain Management program. General model building techniques are provided and illustrated with many Supply Chain decision problems. You will also learn to classify your model based on its mathematical properties so that you can identify an appropriate computer package to obtain the solution. Because of their importance, significant time is devoted to formulating linear programming models using a variety of examples. You will see how to obtain and interpret a solution from a computer package in EXCEL and how to use the associated output to answer "What-happens-if" questions that arise after solving the problem. You will also get an introduction to formulating and solving other optimization problems in the areas of integer programming, networks, combinatorial optimization, and nonlinear programming. The art of formulating problems, understanding what is involved in solving them, and obtaining and interpreting the solution from a computer package are shown. A comparison with linear programming problems is provided as a way of understanding the advantages and disadvantages of these other models and their solution procedures. Prereq: For Master of Supply Chain Management students only.

SCMG 420. Experiential Learning with Six Sigma Green Belt. 3 Units. The Six Sigma process is the standard for quality improvement in organizations around the globe. In this course, we study the details of the five steps in the Six Sigma process: DEFINE, MEASURE, ANALYZE, IMPROVE, and CONTROL (DMAIC). Many tools, concepts, and processes that are often an integral part of Six Sigma projects in companies are included in the course content. They range from the very basic tools of quality (such as cause-and-effect diagrams for brainstorming) to complete processes (such as benchmarking, quality function deployment, failure mode and effects analysis-FMEA). Statistical concepts with software applications that are central to Six Sigma including statistical process control and introduction to design of experiments are also included. Once the Six Sigma process and its various components are understood, we study quality management including quality control, quality planning, quality improvement, strategic quality management, and quality strategy. A major requirement of the course is an action learning component in which the students are assigned in groups to work on unpaid real projects of Six Sigma in local industries. Students meeting the required standards of performance will earn a Green Belt Certification in Six Sigma and Quality Management from the Weatherhead School of Management. Offered as OPMT 420 and SCMG 420. Prereq: SCMG/ MSOR 406 and SCMG/MSOR 433 and enrolled in Master of Supply Chain Management program.

SCMG 422. Lean Operations. 3 Units.

In this course, students will be taught how to identify inefficiencies associated with overproduction, waiting, transport, extra processing, inventory, motion and defects. One-by-one, areas of inefficiencies are to be identified and improved while educating the workforce towards continual improvement. Similarly, participants will be trained to reduce lead times in areas such as engineering design, order entry, purchasing, order fulfillment, receiving, production, packaging, shipping, invoicing and collection. The above improvements will lead to cost reductions. Students will be trained in costing techniques, target pricing, and cost maintenance. The course will be delivered along the following themes: 1) Mapping the Value Stream (current and future state) 2) Workplace Organization: 5S & Safety, 3) Defect Reduction and Error Proofing, 4) Quick Changeover, 5) Standard Operations, 6) Total Productive Maintenance, 7) Visual management, 8) One-piece flow, 9) Lean Metrics. This course is not oriented toward specialists in operations management. Its goal is to introduce you to the environments and help you appreciate the problems that operations managers are confronted with and the key issues in their management. Offered as OPMT 422 and SCMG 422. Prereq: SCMG 406.

SCMG 432A. Spreadsheet and Business Process Simulation - I. 1.5 Unit. Computer simulation is a process of designing and creating a computer model (vedio game) that mimics an existing or proposed system so as to better understand the behavior of the system. Many studies have shown that in industry, simulation is most frequently used Operations Research tool due to its ability to deal with complex systems. Another reason for the recent popularity of simulation is the availability of specialized software with animation capabilities. This course is designed to give students basic ideas of simulation methodology with the aid of popular simulation software. The emphasis of the course is in simulating business processes, however, the versatility of the technique will be demonstrated with applications from finance, health care, etc. The main focus of the course is on building simulation models using state of the art software (@RISK and ARENA). The grading is based on weekly homework and final exam. Offered as OPRE 332A, OPRE 432A, and SCMG 432A. Prereq: SCMG 433.

SCMG 432B. Spreadsheet and Business Process Simulation - II. 1.5 Unit. Computer simulation is a process of designing and creating a computer model (video game) that mimics an existing or proposed system so as to better understand the behavior of the system. Many studies have shown that in industry, simulation is most frequently used Operations Research tool due to its ability to deal with complex systems. Another reason for the recent popularity of simulation is the availability of specialized software with animation capabilities. This course is designed to give students basic ideas of simulation methodology with the aid of popular simulation software. The emphasis of the course is in simulating business processes, however, the versatility of the technique will be demonstrated with applications from finance, health care, etc. This course builds on 332A/432A (where the main emphasis was to build simulation model using @RISK and ARENA) and focuses on statistical ideas and tools needed in building, analyzing and experimenting with these models. Offered as OPRE 332B, OPRE 432B, and SCMG 432B Prereq: SCMG 433 and Prereq or Coreq: SCMG 432A.

SCMG 433. Statistical Data Analytics for Supply Chain. 3 Units.

Data of many kinds are typically available in practice, but the challenge is to use those data to make effective professional decisions. This software-intensive course begins with useful descriptions of data and the probability theory foundation on which statistics rests. It continues to statistics, including the central limit theorem, which explains why data often appear to be normally distributed, and the Palm-Khintchine theorem which explains why data often appear to have a Poisson distribution. The remainder of the course focuses on regression and forecasting, including detecting and overcoming some of the deadly sins of regression, and the surprising flexibility of regression models. Recommended preparation: One semester of undergraduate calculus or consent of instructor. Offered as OPRE 433 and SCMG 433. Prereq: For Master of Supply Chain Management students only.

SCMG 450. Project Management. 3 Units.

Project management is concerned with the management and control of a group of interrelated tasks required to be completed in an efficient and timely manner for the successful accomplishment of the objectives of the project. Since each project is usually unique in terms of task structure, risk characteristics and objectives, the management of projects is significantly different from the management of repetitive processes designed to produce a series of similar products or outputs. Large-scale projects are characterized by a significant commitment of organizational and economic resources coupled with a high degree of uncertainty. The objective of this course is to enhance the ability of participants to respond to the challenges of large-scale projects so that they can be more effective as project managers. We study in detail up-to-date concepts, models, and techniques useful for the evaluation, analysis, management, and control of projects. Offered as OPMT 350, OPMT 450 and SCMG 450. Prereq or Coreq: SCMG 433

SCMG 460. Supply Chain Strategy. 1.5 Unit.

Have you ever wondered what it takes to manage a successful supply chain? It all comes down to the right strategy. Supply Chain Management Strategy is the indispensable direction for managing a successful supply chain. This course reviews how organizational strategies can inform operations and supply chain strategies. Several cases in various industries are discussed to illustrate how businesses employ various supply chain business models to achieve higher efficiencies, better, quality, faster service, and subsequently promote business objectives. Offered as OPMT 460 and SCMG 460. Prereq: For Master of Supply Chain Management students only.

SCMG 461. Professional Development in Supply Chain. 0 Unit.

The course will cover topics such as: overview of SCM, networking best practices, social media, applying for jobs, professional communications, behavioral interviewing, career planning, etc. Guest lecturers from industry leaders will be featured throughout. Prereq: Enrolled in the Master of Supply Chain Management program.

SCMG 462. Artificial Intelligence Fundamentals for Supply Chain Management. 1.5 Unit.

Artificial Intelligence (AI) is transforming how companies manage their supply chains, enabling more accurate predictions, smarter decisions, increased efficiency, and competitive advantage. This course provides a comprehensive introduction to AI and Machine Learning (ML), emphasizing practical applications within Supply Chain Management (SCM). Starting with fundamental AI concepts, students explore supervised and unsupervised learning methods, including decision trees, ensemble learning, clustering, and dimensionality reduction, through practical SCM use cases. Building upon this foundation, the course covers advanced deep learning methods, including multi-layer perceptrons (MLPs), convolutional neural networks (CNNs) for computer vision, and recurrent neural networks (RNNs) and transformers for natural language processing (NLP), relevant to inventory management, predictive maintenance, quality control, and supplier analysis. The course also addresses critical topics in AI ethics, model interpretability, fairness, and bias mitigation, promoting responsible AI implementation. Through lectures and practical examples, students will develop skills to implement and critically assess AI-driven solutions to enhance supply chain prediction, decision-making, and performance. Coding exercises will be done in Python. Prereq: SCMG 433 and SCMG 492 and enrolled in the Master of Supply Chain Management program.

SCMG 463. Case Studies in Artificial Intelligence - Supply Chain Applications. 1.5 Unit.

This course will take an in-depth look at important SCM Digitization business cases to build a broad awareness. Topics related to digitization will be: planning, procurement, distribution, manufacturing and services. Prereq: SCMG 492 and enrolled in the Master of Supply Chain Management program.
SCMG 470. Supply Chain Risk Management. 1.5 Unit.

A Supply Chain comprises firms, organizations, and individuals, linked through material, information, and financial flows, and whose activities enable products and services to be created and reach the consumers. Risk Management is the process of identifying risks, forecasting their impact, devising, mitigation strategies, and applying those strategies in anticipation or in response to adverse events. Supply Chain Risk Management (SCRM) is a set of solutions for identifying, measuring, preparing for, and mitigating adverse events in supply chains. As the widespread use of outsourcing is stretching supply chains further geographically and turning supply networks into intricate, global, and fragile webs, supply disruptions happen more frequently than ever and lead to substantial financial losses. A 2015 National Institute of Standards and Technology study concluded that "the likelihood that a manufacturing organization will not experience a supply chain disruption in a twenty-four month period is a mere 2%." According to research, firms that experienced supply glitches have suffered tremendous erosion in the shareholders' value (the abnormal return on stock of these companies was negative 40%). Disruptions are only one example of supply risks. From commodity price fluctuations to product adulteration, from cyber security to patent violations, from regulatory compliance to supplier bankruptcies, supply chains are rife with risks and opportunities if you know how to recognize and take advantage of them. In this course, you will learn the best industry practices and be exposed to the most current academic insights on SCRM. You will know the process for SCRM, a variety of well-known and emerging supply risks, and the unique challenges of managing each one. You will also learn advantages and disadvantages of different risk mitigation tools. You will take away a number of useful analysis tools that you can immediately apply at your job. You will know the terminology of the field, the definitions, and the "state of the art" techniques. By the end of the course, you will be able to evaluate companies' performance with respect to supply risk management, and you will be able to create, contribute to, and run a supply-risk management program at your company. Offered as OPMT 470 and SCMG 470. Coreq: SCMG 406. Prereq or Coreq: MBAC 507 and SCMG 476A or OPMT 476A or Requisites Not Met permission.

SCMG 475. Global Supply Chain Logistics. 3 Units.

The course will attempt to achieve two objectives: (1) to develop your skills in solving specific types of logistics/supply chain problems, and (2) to improve your capabilities in dealing with unstructured problems of the type encountered by intermediate and top managers. Skill development is accomplished through lecturers, case studies, homework, and examinations. These skills are valuable for addressing specific problems where the given technology is useful in treating them. On the other hand, broader analytical skills are enhanced using case studies and class discussion, which allow problem solving to be placed in a larger context. Defining a framework for analysis, applying concepts and principles, and commenting on the analysis of others help to achieve the second objective. Of course, these objectives interplay throughout the course of study. Offered as OPMT 475 and SCMG 475. Prereq: SCMG/MSOR 406 and SCMG/MSOR 433 and enrolled in Master of Supply Chain Management program.

SCMG 476A. Strategic Sourcing in Supply Chain. 1.5 Unit.

The primary purpose of the course is to provide a comprehensive introduction to supply issues in manufacturing and service organizations. Procurement and supply management has evolved as a strategic function across various industries. Recent volatility in commodity prices has further enhanced the challenges in procurement. This course explores sourcing strategies in global supply chains to reduce cost and enhance the competitiveness of the firm. This course will provide you with a framework for thinking about strategic sourcing and tools to procure commodities and services efficiently. Offered as OPMT 476A and SCMG 476A. Prereq: For Master of Supply Chain Management students only.

SCMG 477A. Business Forecasting. 1.5 Unit.

This course introduces nonmathematical managers to the major quantitative models designed for sound demand and system forecasting in today's complex and increasingly uncertain supply chains. Topics will also include reliability of historical data sets to forecast future patterns. The course will also cover non-quantitative tools to forecast demand for new products, services and technologies when historical data are not readily available. Emphasis is placed on a general understanding of theory, mechanics, application potential, available software packages, and templates. Offered as OPMT 377A, OPMT 477A and SCMG 477A. Prereq: SCMG 411A and SCMG 433 and enrolled in Master of Supply Chain Management program.

SCMG 477B. Enterprise Resource Planning in the Supply Chain. 1.5 Unit. Enterprise resource planning is the dominant system by which companies translate the needs from their customers into the detailed plans that the company must perform to meet the customer needs, and the resulting support the company will need from its suppliers. As such,

it is a central player in the process of supply chain management. In this course, we study both the quantitative and qualitative concepts and techniques to help manage a company's operations to perform these important translation and planning tasks in order to help the company be successful. A major emphasis during the course is the design of processes and procedures (algorithms) for solving very complex (wicked) problems as a part of both class discussions and while working on case studies, as well as critiquing the designs so as to clearly understand their limitations. Offered as OPMT 377B, OPMT 477B, and SCMG 477B Prereq: Enrolled in Master of Supply Chain Management program. Prereq or Coreq: SCMG 477A.

SCMG 478. Operational Excellence. 3 Units.

This course focuses on the essence, principles, and practices of total quality management (TQM) and Operational Excellence. Students learn management issues of identifying, analyzing, and implementing improvement projects in organizations. Topics are mostly non-quantitative with a focus on challenging aspects of quality management that students need to know beyond green belt certification such as learning to see processes better, defining quality ethically, analyzing side effects of change, and leading Kaizen, benchmarking, and brainstorming sessions. The course involves a rigorous real-world project of continuous improvement. Students will also have an opportunity to visit a local plant to get hands on experience with a real Kaizen event. Several guest talks are also scheduled to invite Black Belt professionals to discuss their experiences with quality management in Supply Chain. Offered as OPMT 478 and SCMG 478. Prereq: For Master of Supply Chain Management students only and (SCMG 420 or OPMT 420 or IIME 440).

SCMG 480. Blockchain Technology in Supply Chain Management. 1.5 Unit.

This course is intended to provide students with a solid foundation in blockchain basics and recent innovations and how this emerging technology can disrupt supply chains by addressing problems related to inefficiency, opacity, and fraud. We will cover fundamentals of blockchain technology such as distributed ledger, public key cryptography, the Bitcoin protocol, and proof-of-work consensus mechanism, as well as the Ethereum blockchain, proof-of-stake, smart contracts, oracles, layer 2 scaling solutions, and Solidity for implementing smart contracts. Furthermore, the course explores how blockchain technology can aid supply chain systems in lowering costs, ensuring product quality, enhancing speed, minimizing risks, promoting flexibility, and facilitating sustainable practices. The course also discusses various applications of blockchain technology in supply chain management, including its use in the food and beverage industry, healthcare and pharmaceutical industry, and supply chain finance. Lastly, the course highlights how combining blockchain technology with other cutting-edge technologies, such as artificial intelligence (AI), can amplify its value to supply chains. Offered as OPMT 480 and SCMG 480. Prereq or Coreq: SCMG 406 or MBAC 408 or MBAC 507 or HSMC 412 or IIME 432 or Requisites Not Met permission.

SCMG 481. Artificial Intelligence for Business Management. 1.5 Unit. In an era marked by rapid technological advancements and an abundance of data, the role of Artificial Intelligence (AI) in transforming business practices has become pivotal. This course aims to demystify AI and elucidate its rapidly growing influence in the business world. We will cover the fundamentals of AI, its practical applications in various business sectors, and the strategic integration of AI in business processes. Throughout this course, students will delve into the core technologies underpinning AI, including deep learning, computer vision, natural language processing, and generative AI, and explore how these technologies are revolutionizing marketing, finance, accounting, operations, supply chain management, and customer relations. The course also provides a high-level overview of how AI is employed in decision-making and improving business operations. Furthermore, the course addresses the crucial aspects of ethics, legal compliance, and societal impacts of AI implementation in business. By exploring case studies and real-world applications, students will gain a nuanced understanding of the opportunities and challenges presented by AI in the business context. This course requires no coding background and is tailored for management and business students. Familiarity with basic statistical methods (e.g., linear regression) is needed. Offered as OPMT 481 and SCMG 481. Prereq: MBAC 511 or MBAP 403 or SCMG 433 or BUAI 433.

SCMG 491. Revenue Management. 3 Units.

This course will focus on the theories and applications of data techniques to analyze demand models, and use optimization techniques to inform strategic decision making upon pricing and revenue management problems. The key ingredients of the class include the use of sophisticated data and optimization tools towards: - Mastering static and dynamic demand models - Understanding consumer choice behaviors - Understanding and formulating firm policies based on price response - Creating optimization toolkits for organizational decision making - Understanding and formulating competitive response The course is "tools agnostic" - you are welcome to use any of the available software packages (like MS Excel, Stata, SPSS) and programming languages (like R, Python or Matlab). Offered as OPMT 491 and SCMG 491. Prereq: (SCMG 433 or BUAI 433 or MBAC 511 or MBAP 403 or OPRE 207) and (SCMG 406 or BUAI 406B or MBAP 408 or OPRE 301 or MBAC 507).

SCMG 492. Foundations of Python Programming. 1.5 Unit.

Python is an object-oriented programming language that can interact with the world wide web as well as Excel and other programming languages like VBA. As such, Python has gained popularity and is becoming an industry standard in many areas, including supply chain management. In addition to assignment, if/then, and for/ while statements, in this course you will learn about object-oriented programming and how to implement those ideas with appropriate data structures. You will also learn how to use libraries that others have created, such as Numpy for numerical calculations (like working with vectors, matrices, and solving systems of linear equations). In addition to individual homeworks, you will solve an assigned project in groups and make a final presentation to the class with PowerPoint. Being able to communicate your model and results is part of learning to work effectively with others in an organization, which is a goal of the supply chain program. All of this is designed to enable you to build and solve models that help organizations make good decisions. Offered as BUAI 492 and SCMG 492. Prereq: For Master of Supply Chain Management students only.