MANAGERIAL ECONOMICS

15.002 Sloan Innovation Period Requirement
Prereq: None
G (Fall, IAP, Spring, Summer)
Units arranged [P/D/F]
Units assigned to MBA students upon completion of the Sloan Innovation Period requirement. MBAs only.
T. Walor

15.010 Economic Analysis for Business Decisions
Prereq: None
G (Fall)
4-0-5
15.011 Economic Analysis for Business Decisions
(Subject meets with 15.016)
Prereq: None
G (Fall)
4-0-5
Introduces principles of microeconomic analysis as a framework for making more informed managerial decisions. Includes the analysis of competitive markets with supply and demand, sources of market power, pricing, anti-trust policy, as well as an overview of game theory and its application to competitive strategy. Students use the tools presented to analyze business and public policies. Students taking graduate version complete additional assignments. Intended primarily for non-MBA students.
J. Doyle

15.012 Applied Macro- and International Economics
Prereq: None
G (Spring)
3-0-6
Uses case studies to investigate the macroeconomic environment in which firms operate. First half of subject develops the basic tools of macroeconomic management: monetary, fiscal, and exchange rate policy. Discusses recent emerging market and financial crises, examining their causes, how best to address them, and how to prevent them from recurring in the future. Second half evaluates different strategies of economic development. Topics include growth, the role of debt and foreign aid, and the reliance on natural resources.
Staff

15.013 Industrial Economics for Strategic Decisions
Prereq: 15.010 or 15.011
G (Fall)
3-0-9 H-LEVEL Grad Credit
Applies principles of industrial economics most relevant for corporate strategy to analysis of particular industries. Topics include market structure and its determinants; rational strategic behavior in small numbers situations; strategies for price and nonprice competition; dynamic pricing, output, and advertising decisions; entry and entry deterrence; competition with network externalities; investments under uncertainty; R&D and patent licensing; and the growth and evolution of industries.
R. Pindyck

15.014 Applied Macro- and International Economics II
Prereq: 15.012 or 15.015
G (Fall)
2-0-4 H-LEVEL Grad Credit
Builds on 15.012 to establish an understanding of the development processes of societies and economies, the role of social entrepreneurship, and consequences for sustainability. Discusses current challenges that face emerging markets: health and the HIV epidemic, education and poverty, the emergence of financial and other markets, inflation and the role of commodity prices, macroeconomic management and the implications for policy. Across all dimensions, considers the roles of private and social entrepreneurs, as well as the public sector.
R. Rigobon

15.015 Macro and International Economics
Prereq: Permission of instructor
G (Fall; first half of term)
2-0-4 H-LEVEL Grad Credit
Focuses on the policy and economic environment of firms. Subject divided in three parts: study of the closed economy and how monetary and fiscal policy interacts with employment, GNP, inflation, and interest rates; examination of national economic strategies for development and growth, and study of the recent financial and currency crises in emerging markets; study of the problems faced by transition economies and the role of institutions both as the engine of growth, and as the constraints for policy. Restricted to institutions both as the engine of growth, and as the constraints for policy.
R. Rigobon, A. Cavallo

15.016 Economic Analysis for Business Decisions
(Subject meets with 15.011)
Prereq: None
U (Fall)
4-0-5
Introduces principles of microeconomic analysis as a framework for making more informed managerial decisions. Includes the analysis of competitive markets with supply and demand, sources of market power, pricing, anti-trust policy, as well as an overview of game theory and its application to competitive strategy. Students use the tools presented to analyze business and public policies. Students taking graduate version complete additional assignments.
J. Doyle

15.021J Real Estate Economics
(Subject meets with 12.848J, 15.026J)
Prereq: 14.01, 15.010, or 15.011
G (Fall)
4-0-8 H-LEVEL Grad Credit
See description under subject 11.433J.
W. C. Wheaton

15.023J Global Climate Change: Economics, Science, and Policy
(Subject meets with 12.848J, ESD.128J)
Prereq: Calculus II (GIR); 5.60; 14.01 or 15.010; or permission of instructor
Acad Year 2014–2015: Not offered
Acad Year 2015–2016: G (Spring)
3-0-6
Introduces scientific, economic, and ecological issues underlying the threat of global climate change, and the institutions engaged in negotiating an international response. Develops an integrated approach to analysis of climate change processes, and assessment of proposed policy measures, drawing on research and model development within the MIT Joint Program on
the Science and Policy of Global Change. Graduate students are expected to explore the topic in greater depth through reading and individual research.

R. G. Prinn

15.024 Applied Economics for Managers
Prereq: Permission of instructor
G (Summer)
3-0-6 H-LEVEL Grad Credit
Credit cannot also be received for 15.722

Develops facility with concepts, language, and analytical tools of economics. Primary focus on microeconomics, analysis of markets and strategic interactions among firms. Emphasizes integration of theory, data, and judgment in the analysis of corporate decisions, and in the assessment of the changing global business environment. Restricted to MIT Sloan Fellows in Innovation and Global Leadership.
T. Stoker

15.025 Game Theory for Strategic Advantage
Prereq: 15.010, 15.011, 15.015, or 14.01
G (Spring)
3-0-6 H-LEVEL Grad Credit

Develops and applies principles of game theory relevant to managers’ strategic decisions. Topics include how to reason about strategies and opponents; strategic commitment, reputation, and “irrational” actions; brinkmanship and negotiation; auctions; and the design of markets and contests. Applications to a variety of business decisions that arise in different industries, both within and outside the firm.
A. Bonatti

15.026j Global Climate Change: Economics, Science, and Policy
(Same subject as 12.348J)
(Subject meets with 12.848J, 15.023J, ESD.128J)
Prereq: Calculus II (GIR); 5.60; 14.01 or 15.010; or permission of instructor
Acad Year 2014–2015: Not offered
Acad Year 2015–2016: U (Fall)
3-0-6

Introduces scientific, economic, and ecological issues underlying the threat of global climate change, and the institutions engaged in negotiating an international response. Develops an integrated approach to analysis of climate change processes, and assessment of proposed policy measures, drawing on research and model development within the MIT Joint Program on the Science and Policy of Global Change. Graduate students are expected to explore the topic in greater depth through reading and individual research. 12.340 recommended.
R. G. Prinn

15.031J Energy Decisions, Markets, and Policies
(Same subject as 11.161J, 14.43J, 17.397J, 21A.415J)
Prereq: 14.01, 15.016, or permission of instructor
Acad Year 2014–2015: Not offered
Acad Year 2015–2016: U (Fall)
4-0-8 HASS-S

Structured around choices and constraints regarding sources and uses of energy by households, firms, and governments, introduces managerial, economic, political, social and cultural frameworks for describing and explaining behavior at various levels of aggregation. Includes examples of cost-benefit, organizational and institutional analyses of energy generation, distribution, and consumption. Topics include the role of markets and prices; financial analysis of energy-related investments; institutional path dependence; economic and political determinants of government regulation and the impact of regulation on decisions; and other forms of government action and social norms regarding desired behavior and opportunities for businesses and consumers, including feedback into the political/regulatory system. Examples drawn from a wide range of countries and settings.
D. Lessard, R. Schmalensee, S. Silbey, C. Warshow

15.032J Engineering, Economics and Regulation of the Electric Power Sector
(Same subject as 6.695J, ESD.162J)
Prereq: Permission of instructor
G (Spring)
3-2-7 H-LEVEL Grad Credit

See description under subject ESD.162J.
I. Perez-Arriaga, C. Knittel

15.034 Metrics for Managers: Big Data and Better Answers
Prereq: None
G (Fall)
3-0-6

Freakonomics meets big data in this class that enables students to evaluate the quality of evidence supported by data and implement an empirical toolkit that provides credible answers to questions in finance, marketing, strategy, and general business planning. Uses an econometrics framework is (a.k.a. ‘metrics’) with an in-depth examination of regression modeling and its insights for related data analytics. Focuses primarily on empirical work conducted by students via in-class labs, problem sets, and empirical projects.
J. Doyle

15.037J Energy Economics and Policy
(Same subject as 14.44J)
Prereq: 14.01
U (Spring)
4-0-8 HASS-S
Credit cannot also be received for 14.444, 15.038

See description under subject 14.44J.
C. Knittel

15.038j Energy Economics and Policy
(Same subject as 14.444J)
Prereq: 14.01
G (Spring)
4-0-8

Credit cannot also be received for 14.44, 15.037

See description under subject 14.444J.
C. Knittel

15.040 Seminar in Managerial Economics
Prereq: 15.010, 15.012
G (Spring)

Units arranged H-LEVEL Grad Credit
Can be repeated for credit
Group study of current topics related to managerial economics.
T. M. Stoker

15.053 Optimization Methods in Management Science
(Subject meets with 15.058)
Prereq: None
U (Spring)
4-0-8

Introduces students to the theory, algorithms, and applications of optimization. The optimization methodologies include linear programming, network optimization, integer programming, and decision trees. Applications to logistics, manufacturing, transportation, marketing, project management, and finance. Includes a team project in which students select and solve a problem in practice.
J. B. Orlin

15.054j The Airline Industry
(Same subject as 1.232J, 16.71J, ESD.217J)
Prereq: None
G (Fall)
3-0-9

See description under subject 16.71J.

OPERATIONS RESEARCH/STATISTICS

15.055 Optimization Methods in Management Science
(Subject meets with 15.058)
Prereq: None
U (Spring)
4-0-8

Introduces students to the theory, algorithms, and applications of optimization. The optimization methodologies include linear programming, network optimization, integer programming, and decision trees. Applications to logistics, manufacturing, transportation, marketing, project management, and finance. Includes a team project in which students select and solve a problem in practice.
J. B. Orlin
15.058 Optimization Methods in Operations Research
(Subject meets with 15.053)
Prereq: None
G (Summer)
4-0-8
Introduces students to the theory, algorithms, and applications of optimization. Methodologies include linear programming, network optimization, integer programming, and decision trees. Applications to logistics, manufacturing, transportation, marketing, project management, and finance. Includes a team project in which students select and solve a problem in practice. Students taking graduate version complete additional assignments.
J. Orlin

15.060 Data, Models, and Decisions
Prereq: Permission of instructor
G (Fall)
3-0-6 H-LEVEL Grad Credit
Credit cannot also be received for 15.730
Introduces students to the basic tools in using data to make informed management decisions. Covers introductory probability, decision analysis, basic statistics, regression, simulation, linear and nonlinear optimization, and discrete optimization. Computer spreadsheet exercises, cases, and examples drawn from marketing, finance, operations management, and other management functions. Restricted to first-year Sloan master's students.
D. Bertsimas, R. Freund, G. Perakis, A. S. Schulz

15.062J Data Mining: Finding the Data and Models that Create Value
(Same subject as ESD.754iJ)
Prereq: 15.060 or 15.075
G (Fall; second half of term)
2-0-4 H-LEVEL Grad Credit
Provides an introduction to data mining and machine learning, a class of methods that assist in recognizing patterns and making intelligent use of massive amounts of data collected via the internet, e-commerce, electronic banking, point-of-sale devices, bar-code readers, medical databases, search engines, and social networks. Topics selected from logistic regression, association rules, tree-structured classification and regression, cluster analysis, discriminant analysis, and neural network methods. Presents examples of successful applications in areas such as credit ratings, fraud detection, marketing, customer relationship management, and investments. Introduces data-mining software. Term project required.
R. E. Welsch

15.064J Engineering Probability and Statistics
(Same subject as ESD.751J)
Prereq: Calculus II (GIR)
G (Summer)
4-0-8 H-LEVEL Grad Credit
Modeling and analysis of uncertainty and variation. Covers probability models and distributions, regression, and basic statistical procedures pertinent to manufacturing and operations. Introduces experimental and robust design, statistical process control, forecasting, and data mining. Students use a data analysis package, such as JMP, Minitab, or MATLAB. Primarily for Leaders for Global Operations students.
A. I. Barnett, R. E. Welsch

15.066J System Optimization and Analysis for Operations
(Same subject as 2.851J, ESD.750J)
Prereq: Calculus II (GIR)
G (Summer)
4-0-8 H-LEVEL Grad Credit
Introduction to mathematical modeling, optimization, and simulation, as applied to manufacturing. Specific methods include linear programming, network flow problems, integer and nonlinear programming, discrete-event simulation, heuristics and computer applications for manufacturing processes and systems. Restricted to Leaders for Global Operations students.
V. Farias

15.068 Statistical Consulting
Prereq: 15.060
G (Fall)
3-0-6 H-LEVEL Grad Credit
Addresses statistical issues as a consultant would face them: deciphering the client’s question; finding appropriate data; performing a viable analysis; and presenting the results in compelling ways. Real-life cases and examples.
A. I. Barnett

15.070J Advanced Stochastic Processes
(Same subject as 6.265I)
Prereq: 6.431, 15.085J, or 18.100
Acad Year 2014–2015: Not offered
Acad Year 2015–2016: G (Fall)
3-0-9 H-LEVEL Grad Credit
Analysis and modeling of stochastic processes. Topics include measure theoretic probability, martingales, filtration, and stopping theorems; elements of large deviations theory; Brownian motion and reflected Brownian motion; stochastic integration and Itô calculus; functional limit theorems. Applications to finance theory, insurance, queueing and inventory models.
D. Gamarnik, D. Shah

15.072J Queues: Theory and Applications
(Same subject as 6.264I)
Prereq: 6.262
Acad Year 2014–2015: Not offered
Acad Year 2015–2016: G (Spring)
3-0-9 H-LEVEL Grad Credit
Modeling and analysis of queueing systems, with applications in communications, manufacturing, computers, call centers, service industries and transportation. Topics include birth-death processes and simple Markovian queues, networks of queues and product form networks, single and multi-server queues, multi-class queueing networks, fluid models, adversarial queueing networks, heavy-traffic theory and diffusion approximations. Covers state of the art results which lead to research opportunities.
D. Bertsimas, D. Gamarnik, J. N. Tsitsiklis

15.073J Logistical and Transportation Planning Methods
(Same subject as 1.203I, 6.281I, 16.76I, ESD.216I)
Prereq: 6.041
G (Fall)
3-0-9 H-LEVEL Grad Credit
See description under subject 1.203I.
R. C. Larson, A. R. Odoni, A. I. Barnett

15.074J Predictive Data Analytics and Statistical Modeling
(Same subject as ESD.755I)
Prereq: 6.431, 15.060, or permission of instructor
G (Spring)
4-0-5 H-LEVEL Grad Credit
Designed for students who have some acquaintance with probability and/or statistics and want exposure to a broader range of topics and examples. Begins with a brief review of statistics...
and regression by addressing advanced topics, such as bootstrap resampling, variable selection, data and regression diagnostics, visualization, and Bayesian and robust methods. Goes on to cover data-mining and machine learning, including classification, logistic regression, and clustering. Culminates with time series analysis and forecasting, design of experiments, analysis of variance, and process control. Students use statistical computing systems based on Excel add-ins and stand-alone packages. Includes case studies involving finance, management science, consulting, risk management, and engineering systems. Term project required.

R. E. Welsch

15.075J Statistical Thinking and Data Analysis
(Same subject as ESD.07J)
Prereq: 6.041
U (Fall)
4-0-8
Introduces statistical data analysis. Topics chosen from applied probability, sampling, estimation, hypothesis testing, linear regression, analysis of variance, categorical data analysis, and nonparametric statistics.
C. R. Friedrich

15.077J Statistical Learning and Data Mining
(Same subject as ESD.753J)
Prereq: 6.431, 15.085, or 18.440; 18.06 or 18.700
G (Spring)
4-0-8 H-LEVEL Grad Credit
Advanced introduction to the theory and application of statistics, data-mining, and machine learning, concentrating on techniques used in management science, marketing, finance, consulting, engineering systems, and bioinformatics. First half builds the statistical foundation for the second half, with topics selected from sampling, including the bootstrap, theory of estimation, testing, nonparametric statistics, analysis of variance, categorical data analysis, regression analysis, MCMC, EM, Gibbs sampling, and Bayesian methods. Second half focuses on data mining, supervised learning, and multivariate analysis. Topics selected from logistic regression; principal components and dimension reduction; discrimination and classification analysis, including trees (CART), partial least squares, nearest neighbor and regularized methods, support vector machines, boosting and bagging, clustering, independent component analysis, and nonparametric regression. Uses statistics software packages, such as R and MATLAB for data analysis and data mining. Term project required.
R. E. Welsch

15.078J Models, Data and Inference for Socio-
Technical Systems
(Same subject as ESD.86J)
Prereq: ESD.83, 6.041, or permission of instructor
G (Spring)
3-0-9
See description under subject ESD.86J.
R. Larson, R. Welsch

15.081J Introduction to Mathematical Programming
(Same subject as 6.251J)
Prereq: 18.06
G (Fall)
4-0-8 H-LEVEL Grad Credit
See description under subject 6.251J.
J. N. Tsitsiklis, A. S. Schulz

15.082J Network Optimization
(Same subject as ESD.78J)
Prereq: 15.081 or permission of instructor
G (Fall)
3-0-9 H-LEVEL Grad Credit
Doctoral seminar on network models and algorithms. Emphasis on the design and analysis of efficient algorithms for network flow models. Topics may vary from year to year.
J. Orlin

15.083J Integer Programming and Combinatorial Optimization
(Same subject as 6.859J)
Prereq: 15.081 or permission of instructor
Acad Year 2014–2015: Not offered
Acad Year 2015–2016: G (Spring)
4-0-8 H-LEVEL Grad Credit
Introduces the principal algorithms for linear, network, discrete, robust, nonlinear, dynamic optimization and optimal control. Emphasizes methodology and the underlying mathematical structures. Topics include the simplex method, network flow methods, branch and bound and cutting plane methods for discrete optimization, optimality conditions for nonlinear optimization, interior point methods for convex optimization, Newton's method, heuristic methods, and dynamic programming and optimal control methods.
D. Bertsimas, P. Parrilo

15.084J Nonlinear Optimization
(Same subject as 6.252J)
Prereq: 18.06, 18.100
G (Spring)
4-0-8 H-LEVEL Grad Credit
See description under subject 6.252J.
R. M. Freund, D. P. Bertsekas, G. Perakis

15.085J Fundamentals of Probability
(Same subject as 6.436J)
Prereq: Calculus II (GIR)
G (Fall)
4-0-8 H-LEVEL Grad Credit
See description under subject 6.436J.
J. N. Tsitsiklis, D. Gamarnik

15.093J Optimization Methods
(Same subject as 6.255J)
Prereq: 18.06
G (Fall)
4-0-8 H-LEVEL Grad Credit
Introduces the principal algorithms for linear, network, discrete, robust, nonlinear, dynamic optimization and optimal control. Emphasizes methodology and the underlying mathematical structures. Topics include the simplex method, network flow methods, branch and bound and cutting plane methods for discrete optimization, optimality conditions for nonlinear optimization, interior point methods for convex optimization, Newton's method, heuristic methods, and dynamic programming and optimal control methods.
D. Bertsimas, P. Parrilo

15.094J Robust Modeling, Optimization, and Computation
(Same subject as 6.142J)
Prereq: 18.06 or permission of instructor
G (Spring)
4-0-8 H-LEVEL Grad Credit
Introduces modern robust optimization, including theory, applications, and computation. Presents formulations and their connection to probability, information and risk theory for conic optimization (linear, second-order, and semidefinite cones) and integer optimization. Application domains include analysis and optimization of stochastic networks, optimal mechanism design, network information theory, transportation, pattern classification, structural and engineering design, and financial engineering. Students formulate and solve a problem aligned with their interests in a final project.
D. Bertsimas
15.06 Prediction: Machine Learning and Statistics
Prereq: None
G (Spring)
3-0-9

Gives a practical background and theoretical foundation to machine learning algorithms and Bayesian analysis. Includes an overview of the top ten algorithms in data mining. Covers frameworks for knowledge discovery, a unified view of support vector machines, AdaBoost and regression based on regularized risk minimization; generalization bounds from statistical learning theory based on covering numbers, VC dimension, and the margin theory; as well as basic Bayesian analysis and notes on the history of machine learning and statistics.

C. Rudin

15.097 Seminar in Operations Research and Statistics
Prereq: Permission of instructor
G (Spring)
Units arranged H-LEVEL Grad Credit

Group study of current topics related to operations research/statistics.

G. Perakis, A. S. Schulz

15.098 Seminar in Applied Probability and Stochastic Processes
Prereq: 6.431
G (Fall)
2-0-4 H-LEVEL Grad Credit
Can be repeated for credit

Doctoral student seminar covering current topics in applied probability and stochastic processes.

D. Gamarnik, D. Shah

15.099 Seminar in Operations Research
Prereq: 15.081
G (Spring)
Units arranged H-LEVEL Grad Credit

Doctoral student seminar covering current topics related to operations research.

D. Bertsimas, R. Freund, T. L. Magnanti,
J. B. Orlin, G. Perakis, A. S. Schulz

Civil and Environmental Engineering: 1.151, 1.155, 1.202, 1.203, and 1.205

Electrical Engineering and Computer Science: 6.041, 6.231, 6.245, 6.262, 6.431, and 6.435

Management: 15.034, 15.070, 15.075, and 15.098

Mathematics: 18.05, 18.175, 18.177, 18.440, 18.443, 18.445, and 18.465

See also: 2.830, 5.70, 5.72, 7.02, 8.044, 8.08, 10.816, 11.220, 16.322, 22.38, HST.191, and MAS.622

HEALTH CARE MANAGEMENT

15.121J Clinical Trials in Biomedical Enterprise
(Same subject as HST.975J)
Prereq: None
Acad Year 2014–2015: Not offered
Acad Year 2015–2016: G (Fall)
2-0-4
See description under subject HST.975J.

H. Golub

15.122J Critical Reading and Technical Assessment of Biomedical Information
(Same subject as HST.977J)
Prereq: SB degree in Biological Science or permission of instructor
G (Spring; first half of term)
1-0-2 H-LEVEL Grad Credit
See description under subject HST.977J.

S. Lapidus, J. Karp

15.124J Evaluating a Biomedical Business Concept
(Same subject as HST.973J)
Prereq: None
Acad Year 2014–2015: Not offered
Acad Year 2015–2016: G (Fall)
3-0-6
See description under subject HST.973J.

C. Berke, R. Anders, R. J. Cohen

15.127J Designing and Sustaining Technology Innovation for Global Health Practice
(Same subject as HST.939J)
Prereq: None
Acad Year 2015–2016: 1-0-2 H-LEVEL Grad Credit
Acad Year 2014–2015: Not offered
See description under subject HST.939J.

U. Demirci, J. Blander

15.136J Principles and Practice of Drug Development
(Same subject as 7.547J, 10.547J, ESD.691J, HST.920J)
Prereq: Permission of instructor
G (Fall)
3-0-6 H-LEVEL Grad Credit

Description and critical assessment of the major issues and stages of developing a pharmaceutical or biopharmaceutical. Drug discovery, preclinical development, clinical investigation, manufacturing and regulatory issues considered for small and large molecules. Economic and financial considerations of the drug development process. Multidisciplinary perspective from faculty in clinical; life; and management sciences; as well as industry guests.

T. J. Allen, C. L. Cooney, S. N. Finkelstein,
A. J. Sinskey, G. K. Raju

15.137J Case Studies and Strategies in Drug Discovery and Development
(Same subject as 7.549J, 20.486J, HST.916J)
Prereq: Permission of instructor
G (Spring)
2-0-4 H-LEVEL Grad Credit

See description under subject 20.486J.

S. R. Tannenbaum, A. J. Sinskey, A. Wood

15.141J Economics of the Health Care Industries
(Same subject as HST.918J)
Prereq: Permission of instructor
G (Spring)
3-0-6 H-LEVEL Grad Credit

Focuses on economic issues in various health care and allied industries, such as the pharmaceutical, biotechnology, medical device, vaccine and diagnostic sectors. Addresses differences between health care and other industries; regulatory issues, in the US and globally, that involve establishment of the efficacy and cost-effectiveness of treatments; managing those who manage research and development; policies to incentivize research and development for neglected tropical diseases; strategic issues in global pricing and marketing; use of e-commerce and information technology; personalized/stratified medicines and diagnostic biomarkers; and formation and management of various alliances. Visiting speakers from academia, government, NGOs, and industry. Assignments include 4 to 6 essays.

E. R. Berndt
GLOBAL ECONOMICS AND MANAGEMENT

15.218 Global Economic Challenges and Opportunities
Prereq: None
Acad Year 2014–2015: Not offered
Acad Year 2015–2016: G (Spring)
3-0-6

Analyzes the causes, effects and policy responses to major global economic issues. Focuses on financial crises, beginning with historical examples in emerging markets and building up to recent crises. Also focuses on current economic debates and challenges facing countries around the world. Possible topics include unsustainable debt, European union, aging populations, global warming, inequality and poverty, oil and commodity markets, international institutions, and the implications of rapid growth in the BRICs (Brazil, Russia, India, and China) and “frontier” economies. Some background in international economics recommended.

K. Forbes

15.220 Global Strategy and Organization
Prereq: None
G (Fall; second half of term)
3-0-3

Focuses on the international dimensions of strategy and organization, and provides a framework for formulating strategies in an increasingly complex world economy, and for making those strategies work effectively. Topics include the globalization of industries, the continuing role of country factors in competition, organization of multinational enterprises, building global networks, and the changing managerial tasks under conditions of globalization.

V. Karplus

15.221 Global Strategy and Organization
Prereq: None
G (Spring; first half of term)
3-0-3

Focuses on the international dimensions of strategy and organization, and provides a framework for formulating strategies in an increasingly complex world economy, and for making those strategies work effectively. Topics include the globalization of industries, the continuing role of country factors in competition, organization of multinational enterprises, building global networks, and the changing managerial tasks under conditions of globalization. Restricted to Sloan Fellows in Innovation and Global Leadership.

Staff

15.223 Global Markets, National Policies, and the Competitive Advantages of Firms
Prereq: None
G (Fall; second half of term)
3-0-3

Examines opportunities and risks firms face in today’s global market. Provides conceptual tools for analyzing how governments and social institutions influence economic competition among firms embedded in different national settings. Public policies and institutions that shape competitive outcomes are examined through cases and analytical readings on different companies and industries operating in both developed and emerging markets. Restricted to Sloan Fellows in Innovation and Global Leadership.

S. Johnson

15.225 Economy and Business in Modern China and India: China Lab and India Lab
Prereq: None
G (Spring)
3-0-9

Provides an integrated approach to analyze the economies of China and India through action learning. The classroom portion covers macro issues of China and India, project-related issues, and personal and learning reflections. The onsite portion involves working with a host company in China or in India. Students work in teams to tackle a real world business problem with an entrepreneurial Chinese or Indian company and produce a final deliverable for the host company. Students are required to take a mid semester trip during SIP and Spring Break to China or India to work onsite with the host company. Past lab projects have included creating a business plan for fundraising, developing a new market strategy, and crafting financial models; the projects have included both for-profit and NGO projects. Limited to graduate students who participate in China Lab or India Lab.

J. Grant, Y. Huang, M. Jester

15.227–15.229 Seminar in International Management
Prereq: None
G (Spring)
Can be repeated for credit
Units arranged

Group study of current topics related to international business.

Staff

15.232 Business Model Innovation: Global Health in Frontier Markets
Prereq: None
G (Fall; first half of term)
3-0-3

Examines how new approaches to operations, revenue, marketing, finance, and strategy enable improved health care in resource-limited settings across Africa, Latin America, and Asia. Draws on system dynamics, design thinking, and strategic analysis. Explores success and failure in innovative healthcare delivery. Analysis of novel business models draws on case studies, videos, industry reports, research, and guest speakers. Students present their assessments of innovative base-of-the-pyramid health enterprises that aim to do more with less. Students who have not taken at least three management or business classes must apply to the instructor for permission to enroll before the first day of class.

A. Sastry

15.233 Global Health Lab
Prereq: None
G (Spring)
3-0-9

Pairs faculty-mentored student teams with enterprises on the front lines of health care delivery in sub-Saharan Africa and South Asia. Custom-designed projects in strategy, business model innovation, operations, marketing, and technology designed to tackle specific barriers identified by each partnering organization. Interactive cases, practical exercises, and conversations with experts, all designed to support project work before, during, and after an intensive two-week onsite collaboration with entrepreneurs, leaders, staff, and stakeholders. Assignments include a portfolio of host deliverables, a foundational toolkit designed to support each project, and a distillation of learning from the field. Enrolled students must be available to work on site in Africa or South Asia for the entire weeks of SIP and Spring Break. Admission by application and interview in the prior November and December. Preference to students who have taken 15.232. Graduate students only.

A. Sastry

15.249 Institutions, Society, and International Business
Prereq: None
G (Spring)
Units arranged
Can be repeated for credit

Advanced seminar in the study of international management. Covers major theoretical work and approaches to empirical research in the fields of national business systems and globalization,
linking them to the core frameworks of strategy and organization theory. Restricted to doctoral students.
E. Obukhova

HISTORY, ENVIRONMENT, AND ETHICS

15.268 Choice Points: Readings on the Exercise of Power and Responsibility
Prereq: None
G (Spring)
3-0-6 [P/D/F]
Managerial power and responsibility. Examines conflicts between power and moral responsibility and the contexts for choice in dealing with a number of such problems. Readings are principally "classics" used to illustrate several enduring issues. Restricted to Sloan Fellows in Innovation and Global Leadership.
Consult S. Sacca

15.269 Leadership Stories: Literature, Ethics, and Authority
Prereq: None
G (Fall)
3-0-6
Explores how we use story to articulate ethical norms. The syllabus consists of short fiction, novels, plays, feature films and some non-fiction. Major topics include leadership and authority, professionalism, the nature of ethical standards, social enterprise, and questions of gender, cultural and individual identity, and work/life balance. Materials vary from year to year, but past readings have included work by Robert Bolt, Michael Frayn, Timothy Mo, Wole Soyinka, H.D. Thoreau, and others; films have included Crouching Tiger Hidden Dragon, Hotel Rwanda, The Descendants, Motorcycle Diaries, Three Kings, and others. Draws on various professions and national cultures, and is run as a series of moderated discussions, with students centrally engaged in the teaching process. Restricted to Sloan Fellows in Innovation and Global Leadership.
Consult S. Sacca

COMMUNICATION

15.270 Ethical Practice: Leading Through Professionalism, Social Responsibility, and System Design
Prereq: None
G (Spring; partial term)
3-0-3
Introduction to ethics in business, with a focus on business management. Students explore theoretical concepts in business ethics, and cases representing the challenges they will likely face as managers. Opportunity to work with guest faculty as well as business and other professional practitioners. Individual sessions take the form of moderated discussion with occasional short lectures from instructor.
L. Hafrey

15.277 Seminar in Communications
Prereq: None
Acad Year 2014–2015: Not offered
Acad Year 2015–2016: G (Fall, Spring)
Units arranged
Can be repeated for credit
15.278 Seminar in Communications
Prereq: None
Acad Year 2014–2015: Not offered
Acad Year 2015–2016: G (Fall, Spring)
Units arranged [P/D/F]
Can be repeated for credit
Group study of current topics related to communication.
J. Yates

15.279 Management Communication for Undergraduates
Prereq: None
U (Fall, Spring)
3-0-9
Develops writing, speaking, teamwork, interpersonal, and cross-cultural communication skills necessary for management professionals. Assignments include creating persuasive memos, writing in response to cases, and giving presentations. Major project involves the production of a team report and presentation on a topic of interest to a professional audience. Instruction in written and oral communication provided.
L. Breslow

15.280 Communication for Leaders
Prereq: Permission of instructor
G (Fall)
3-1-5 H-LEVEL Grad Credit
Credit cannot also be received for 15.710
Students develop and polish communication strategies and methods through discussion, examples, and practice. Emphasizes writing and speaking skills necessary for effective leaders. Includes several oral and written assignments which are integrated with other subjects, and with career development activities, when possible. Schedule and curriculum coordinated with Organizational Processes. Mandatory one hour recitation in small groups. Restricted to first-year Sloan graduate students.
N. Hartman, C. Kelly, R. Pittore, V. Healy-Tangney, K. Blackburn, M. Kazakoff, J. Yates

15.281 Advanced Leadership Communication
Prereq: 15.279, 15.280, or permission of instructor
G (Spring)
3-0-6 H-LEVEL Grad Credit
Introduces interactive oral and interpersonal communication skills critical to leaders, including strategies for presenting to a hostile audience, running effective and productive meetings, active listening, and contributing to group decision-making. Includes team-run classes on chosen communication topics, and an individual analysis of leadership qualities and characteristics. Students deliver an oral presentation and an executive summary, both aimed at a business audience.
N. Hartman

15.282 EnActing Leadership: Shakespeare and Performance (New)
Prereq: None
G (Fall, Spring)
3-0-6
Uses Shakespeare to challenge students' views of leadership and provide them with a deeper understanding of their performance as a leader. While performing shortened versions of Shakespeare’s plays, students consider the serious questions they raise about the nature of leadership, power, and ambition, and explore their own leadership presence. Uses acting to strengthen speaking ability and personal presence.
C. Kelly

15.289 Doctoral Seminar: Communication Skills for Academics
Prereq: Permission of instructor
G (Spring; partial term)
3-0-3 H-LEVEL Grad Credit
Focuses on the communication skills needed for a career in academia. Topics include writing for academic journals, preparing and delivering conference papers and job talks, peer reviewing for journals and conferences, and teaching. Participants are expected to work on a written project and deliver an oral presentation based on their current research. Restricted to doctoral students who have completed their first year. Limited to 20; priority to Sloan students.
J. Yates, L. Breslow
WORK AND ORGANIZATIONAL STUDIES

15.301 Managerial Psychology Laboratory
Prereq: None
U (Fall, Spring)
3-3-9 Institute LAB

Surveys individual and social psychology and organization theory interpreted in the context of the managerial environment. Laboratory involves projects of an applied nature in behavioral science. Emphasizes use of behavioral science research methods to test hypotheses concerning decision-making, group behavior, and organizational behavior. Instruction and practice in communication includes report writing, team projects, and oral and visual presentation. 12 units may be applied to the General Institute Laboratory Requirement. Shares lectures with 15.310.
Fall: A. Yap
Spring: J. Carroll

15.305 Leadership and Management
Prereq: Permission of instructor
U (Fall, Spring)
3-0-6

Explores leadership from the military perspective taught by professors of military science from the Army, Navy and Air Force. Survey of basic principles for successfully managing and leading people, particularly in public service and the military. Develops skills in topics such as oral and written communication techniques, planning, team building, motivation, ethics, decision-making, and managing change. Relies heavily on interactive experiential classes with case studies, student presentations, role plays, and discussion. Also appropriate for non-management science majors.
Information: A. Cranin, D. Ancona

15.310 Managerial Psychology
Prereq: None
G (Fall, Spring)
2-1-6

Surveys social psychology and organization theory as interpreted in the context of the managerial environment. Covers a number of diverse topics, including motivation and reward systems, social influence, groups and teams, leadership, power, organizational design and culture, and networks and communication patterns. Similar in content to 15.311; shares lectures with 15.301. Preference to non-Course 15 students.
Fall: A. Yap
Spring: J. Carroll

15.311 Organizational Processes
Prereq: Permission of instructor
G (Fall)
2-3-4 H-LEVEL Grad Credit

Enhances students' ability to take effective action in complex organizational settings by providing the analytic tools needed to analyze, manage, and lead the organizations of the future. Emphasizes the importance of the organizational context in influencing which individual styles and skills are effective. Employs a wide variety of learning tools, from experiential learning to the more conventional discussion of written cases. Centers on three complementary perspectives on organizations: the strategic design, political, and cultural "lenses" on organizations. Major team project to analyze an actual organizational change, with oral and written reports. Restricted to first-year Sloan master's students.
R. Fernandez, K. Kellogg, D. Apfelbaum

15.316 Building and Leading Effective Teams
Prereq: None
G (Summer)
2-1-0 [P/D/F]

An intensive one-week introduction to leadership, teams, and learning communities. Introduction of concepts and use of a variety of experiential exercises to develop individual and team skills and develop supportive relationships within the Fellows class. Restricted to first-year Leaders for Global Operations students.
Consult J. S. Carroll

15.317 Leadership and Organizational Change
Prereq: None
G (Fall, IAP, Spring, Summer)
Units arranged
Can be repeated for credit

Course spans the entire two-year Leaders for Global Operations (LGO) program, with a focus on leadership that blends theory and practice. During their first summer in the program, students reflect on exemplary leaders' stories in cases, the arts, journalism, philosophy, and social science, and evaluate their own previous leadership experience. During the succeeding four terms, they apply the lessons they have learned in class to their off-campus internship and other activities at Sloan, and intensively review that experience as they reach the end of the program. Classes take the form of moderated discussion, with the expectation that students will participate fully in each session; students also submit short, written deliverables throughout the program.
L. Hafrey

15.318 Discovering Your Leadership Signature
Prereq: 15.311, 15.322, or permission of instructor
G (Spring; first half of term)
3-0-6 H-LEVEL Grad Credit
Can be repeated for credit

Provides the tools to better understand one's unique way of leading change, i.e., leadership signature. Involves intensive self-assessment and interactive exercises aimed to help students identify their key strengths and weaknesses and hone their leadership skills. Focuses on the individual leadership credo and techniques for building confidence and credibility. Students explore alternative approaches to leadership, compare and contrast various leadership styles, and look at a range of leadership capabilities.
D. Ancona

15.320 Strategic Organizational Design
Prereq: None
G (Spring)
3-0-6

Focuses on effective organizational design in both traditional and innovative organizations, with special emphasis on innovative organizational forms that can provide strategic advantage. Topics include when to use functional, divisional, or matrix organizations; how it creates new organizational possibilities; examples of innovative organizational possibilities, such as democratic decision-making, crowd-based organizations, internal resource markets, and other forms of collective intelligence. Team projects include inventing new possibilities for real organizations.
T. Malone

15.321 Improvisational Leadership: In-the-Moment Leadership Skills (New)
Prereq: None
G (Fall, Spring; second half of term)
3-0-3

Designed to provide a practical understanding of the skills of improvisation and their application to leadership. Examines the essential elements of successful leadership, including creativity, emotional intelligence, adaptability, and the capacity to develop effective influence strategies and build strong teams. Cultivates students' ability to respond to the unexpected with confidence and agility. Each class offers a highly experiential learning laboratory where students practice a wide variety of improvised business scenarios, interactive exercises, and simulations.
D. Giardella
15.322 Leading Organizations
Prereq: None
G (Fall, Summer)
4-0-5 [P/D/F]
Credit cannot also be received for 15.716
Analyzes through lectures, discussions, and class exercises, the human processes underlying organizational behavior. Restricted to MIT Sloan Fellows in Innovation and Global Leadership. J. Van Maanen

15.324 Practical leadership (New)
Prereq: None
G (Fall, Spring; first half of term)
3-0-3 [P/D/F]
Strengthens leadership capacities through feedback, reflection, and analysis of important management issues. Students use readings, role plays, experiential exercises, self-reflection, and reviews of their own videos, as well as focused coaching and feedback, to optimize their own leadership capabilities. Focuses on individual leadership growth. Culminates with submission of a written summary of students’ reflections and experiences around leadership from throughout the term. P. Bentley

15.325 Seminar in Leadership I
Prereq: None
Acad Year 2014–2015: Not offered
Acad Year 2015–2016: G (Fall)
2-0-1 [P/D/F]
Provides students opportunities to meet senior executives of private and public institutions, and discuss key management issues from the perspective of top management. Students prepare detailed briefings identifying and analyzing important management issues facing these organizations. Seminar includes a one week field trip to a domestic location. Restricted to MIT Sloan Fellows in Innovation and Global Leadership. Consult S. Sacca

15.326 Seminar in Leadership II
Prereq: 15.325
G (Spring)
2-0-1 [P/D/F] H-LEVEL Grad Credit
Continuation of subject 15.325 on the identification and analysis of important management issues. Students prepare briefings and meet with senior government and international leaders during field trips in selected international areas. Restricted to MIT Sloan Fellows in Innovation and Global Leadership. S. Sacca

15.328 Seminar in Organizational Studies
Prereq: Permission of instructor
Acad Year 2014–2015: Not offered
Acad Year 2015–2016: G (Fall, IAP, Spring, Summer)
Units arranged H-LEVEL Grad Credit
Can be repeated for credit
15.329 Seminar in Organizational Studies
Prereq: Permission of instructor
Acad Year 2014–2015: Not offered
Acad Year 2015–2016: G (Fall, Spring)
Units arranged H-LEVEL Grad Credit
Can be repeated for credit
Group study of current topics related to organizational studies. Consult D. G. Ancona

15.339 Distributed Leadership Workshop (New)
Prereq: None
G (IAP)
2-0-4 [P/D/F]
Focuses on the key leadership capabilities needed in today’s increasingly decentralized organizations: sense-making, relating, visioning, and inventing. Through conceptual discussions, small group exercises, and self-reflection helps students understand leadership capabilities, evaluate their leadership strengths and weaknesses, articulate their values and aspirations, and practice developing leadership skills in interaction with class members. D. G. Ancona, T. Malone, W. Orliskowski

15.341 Individuals, Groups, and Organizations
Prereq: Permission of instructor
G (Fall)
3-0-9 H-LEVEL Grad Credit
Covers classic and contemporary theories and research related to individuals, groups, and organizations. Designed primarily for doctoral students in the Sloan School of Management who wish to familiarize themselves with research by psychologists, sociologists, and management scholars in the area commonly known as micro organizational behavior. Topics may include motivation, decision making, negotiation, power, influence, group dynamics, and leadership. J. Curhan

15.342 Organizations and Environments
Prereq: Permission of instructor
G (Fall)
3-0-9 H-LEVEL Grad Credit
Provides an introduction to research in "organizations and environments," an interdisciplinary domain of inquiry drawing primarily from sociology, and secondarily from economics, psychology, and political science. Seeks to understand organizational processes and outcomes in the surrounding economic, cultural, and institutional context in which they are situated. Also provides an introduction to the main groups that together form the Behavioral Policy Sciences (BPS) area of MIT/Sloan, including economic sociology, organization studies, work and employment, strategic management, global management, and technology, innovation, and entrepreneurship. Consists of four modules taught by faculty from each of the four BPS groups, as well as integrative sessions taught by the main instructor. Preference to first-year doctoral students in BPS. R. Reagans

15.345 Doctoral Proseminar in Behavioral and Policy Sciences
Prereq: Permission of instructor
G (Spring)
2-0-4 [P/D/F] H-LEVEL Grad Credit
Can be repeated for credit
A professional seminar for doctoral students to report on their research, work on their thesis proposals, and practice their job talks. Also addresses general professional issues such as publishing, searching for jobs, the academic career, etc.
Staff

15.347 Doctoral Seminar in Research Methods I
(Subject meets with 21A.809)
Prereq: Permission of instructor
Acad Year 2014–2015: Not offered
Acad Year 2015–2016: G (Fall)
3-0-9 H-LEVEL Grad Credit
Introduces the process of social research, emphasizing the conceptualization of research choices to ensure validity, relevance, and discovery. Includes research design and techniques of data collection as well as issues in the understanding, analysis, and interpretation of data. S. Silbey

15.348 Doctoral Seminar in Research Methods II
Prereq: 15.347 or permission of instructor
G (Fall)
3-0-6 H-LEVEL Grad Credit
Builds on 15.347 to examine contemporary social research methods in depth. Focuses on making students familiar with the most important quantitative methods (e.g., logit/probit models, models for ordinal and nominal outcomes, count models, event history models). E. J. Castilla
15.349J Qualitative Research Methods
(Same subject as 21A.819J)
Prereq: Permission of instructor
G (Spring)
3-0-3
See description under subject 21A.819J.
S. Silbey, E. James

15.350 Managing Technological Innovation and Entrepreneurship
Prereq: None
G (Spring)
3-0-6
Focuses on the challenges inherent in attempting to take advantage of both incremental innovation and more radical or breakthrough changes in products, processes and services. Highlights the importance of innovation to both new ventures and to large established firms and explores the organizational, economic and strategic problems that must be tackled to ensure innovation is a long term source of competitive advantage. Discussions and class presentations cover non-technical as well as technology-based innovation. Restricted to MIT Sloan Fellows in Innovation and Global Leadership.
Staff

15.355 Building Entrepreneurial Advantage
Prereq: Permission of instructor
G (Summer)
3-0-3 H-LEVEL Grad Credit
Analyzes in depth the challenges in identifying, funding and managing innovation-based entrepreneurial ventures in firms of varying size, from standalone start-ups to large corporations. Examines different developmental patterns adopted by start-ups, many of which involve linkages between new and established firms. Explores the ways that entrepreneurial ecosystems—such as those around MIT and Kendall Square—help to expand innovation and entrepreneurial capacity beyond traditional firm boundaries. Includes an intensive project in which students define and present the strategic advantage of a new innovation-based start-up to its founders and an established firm partner. Restricted to Sloan Fellows Program in Innovation and Global Leadership
F. Murray

15.356 Product and Service Development in the Internet Age
Prereq: None
Acad Year 2014–2015: Not offered
Acad Year 2015–2016: G (Spring; second half of term)
3-0-3
Traditional “in-house” innovation processes must be changed to benefit from emerging open-source innovation practices. Users are now increasingly developing their own b-to-b and b-to-c products. Course explains proven open innovation development methods such as crowdsourcing, innovation toolkits, tournaments and more. Includes visits from industry experts who present cases that illustrate the art required to implement each method.
E. A. von Hippel

15.357 Economics of Ideas, Innovation, and Entrepreneurship
Prereq: None
Acad Year 2014–2015: Not offered
Acad Year 2015–2016: G (Spring)
3-0-6
Advanced subject in the economics of technological change. Covers the micro-foundations of the knowledge production function (including the role of creativity and the impact of Science), the impact of institutions and strategic interaction on the commercialization of new technology, and the diffusion and welfare impact of ideas and technology. Includes a mixture and explicit comparisons of both theoretical and empirical research. Students should have adequate preparation in microeconomic theory and econometrics. Primarily for PhD students.
P. Azoulay, S. Stern

15.358 Software and Internet Entrepreneurship
Prereq: 15.900 or 15.902
G (Spring)
3-0-6 H-LEVEL Grad Credit
Considers key strategic concepts, especially the distinction between being a product versus a services company, as well as a product versus a platform strategy. Reviews how software became a business (from early developments in services to the emergence of standardized products), and the transition to software as a service, and cloud computing. Studies critical techniques for managing sales and marketing, as well as product development and project management for software products. Examines how the business differs for various platforms—including new and traditional enterprise software, social media, internet video, and mobile competitors—as well as for entrepreneurs competing in these markets. Student teams help teach some weekly sessions and analyze emerging companies and sectors in team projects.
M. A. Cusumano, I. Sayeed

15.360 Introduction to Technological Entrepreneurship
Prereq: Permission of instructor
G (Fall)
2-0-1 H-LEVEL Grad Credit
Provides an overview of entrepreneurial theory and practice for founding, developing and growing new enterprises, primarily but not exclusively focused on companies with a technological base. Weekly lectures and dinner discussion sessions by academic and practitioner faculty engaged in the MIT Entrepreneurship Program, supplemented by leaders of related MIT entrepreneurship activities, e.g., Trust Center for MIT Entrepreneurship, Technology Licensing Office, Deshpande Center, and Venture Mentoring Service, as well as successful entrepreneurs and venture capitalists. Includes student Open Mic presentations and discussion of new business ideas. Enrollment in ES.580, Silicon Valley Study Tour, for the following spring term required. No listeners; restricted to students in Sloan Entrepreneurship and Innovation (E&I) MBA track.
E. Roberts

15.363J Strategic Decision Making in the Life Sciences
(Same subject as HST.971J)
Prereq: None
G (Spring)
3-0-6
Surveys key strategic decisions faced by managers, investors and scientists at each stage in the value chain of the life science industry. Aims to develop students’ ability to understand and effectively assess these strategic challenges. Focuses on the biotech sector, with additional examples from the pharmaceutical and medical device sectors. Includes case studies, analytical models, and detailed quantitative analysis. Intended for students interested in building a life science company or working in the sector as a manager, consultant, analyst, or investor. Provides analytical background to the industry for biological and biomedical scientists, engineers and physicians with an interest in understanding the commercial dynamics of the life sciences or the commercial potential of their research.
J. Fleming, A. Zarur
15.366 Energy Ventures
Prereq: 15.910; 15.390 or 15.371; 10.391 or 10.579
G (Fall)
3-0-9 H-LEVEL Grad Credit
Project-based approach to innovation and venture creation in the energy sector. Explores how innovation and entrepreneurial concepts apply (or do not apply) to the significant opportunities in the industry. Working in teams, students create new ventures specifically for the energy sector. Lectures guide teams through key elements of their projects. Concurrent enrollment in 15.933 recommended.
W. Aulet, T. Hynes, F. O’Sullivan

15.369 Corporate Entrepreneurship: Strategies for Technology-Based New Business Development
Prereq: 15.310 or 15.311
G (Fall; partial term)
3-0-3 H-LEVEL Grad Credit
Examines strategic and organizational issues for existing firms in developing new technologies and new business areas, from the perspectives of both large corporations and emerging technology-based enterprises. Studies linkages between internal and external sources of technology in major new business development. Examines internal entrepreneurial ventures, alliances (especially between large and new companies), joint ventures, acquisitions, corporate venture capital investments, and licensing as alternative business development approaches. Covers aspects of corporate business development other than mergers and acquisitions. Outside speakers supplement faculty lectures. Student teams prepare term reports on a competitive analysis of some aspect of corporate business development.
V. Livada, A. Kacperczyk

15.370 Building an Entrepreneurial Venture: Advanced Tools and Techniques (New)
(Subject meets with 15.378)
Prereq: 10.808, 15.379, or permission of instructor
U (Fall, Spring)
3-1-8 H-LEVEL Grad Credit
Prereq: 15.910; 15.390 or 15.371; 10.391 or 10.579
G (Fall)
3-0-9 H-LEVEL Grad Credit
Project-based approach to innovation and venture creation in the energy sector. Explores how innovation and entrepreneurial concepts apply (or do not apply) to the significant opportunities in the industry. Working in teams, students create new ventures specifically for the energy sector. Lectures guide teams through key elements of their projects. Concurrent enrollment in 15.933 recommended.
W. Aulet, T. Hynes, F. O’Sullivan

15.371 Innovation Teams
(Same subject as 10.807)
Prereq: 15.911 or permission of instructor
G (Fall, Spring)
4-4-4
Students work in teams to develop commercialization strategies for innovative research projects generated in MIT laboratories. Projects cover critical aspects of commercialization, from selecting the target application and market for the technology to developing an intellectual property strategy and performing a competitive analysis. Instruction provided in communication and teamwork skills, as well as analysis of the challenges and benefits of technology transfer. Includes lectures, guest speakers, and extensive team coaching. Designed primarily for students in engineering, science, and management. Applications, resumes, and a brief statement of interest are required prior to registration.
F. Murray, L. Perez-Breva

15.373 Venture Engineering (New)
(Same subject as 2.912)
Prereq: Permission of instructor
U (Fall, Spring)
3-0-9
Develops the capability to move from testing ideas to assembling a venture as a system comprised of technological, human, social, regulatory, managerial, and financial processes and flows that affect costs, revenues, and value. Begins with a focus on leadership, addressing key issues involved in recruiting and building a founder team and its early employees. Fosters understanding of financial resource needs for the new enterprise and methods for raising funds. Students engage in a venture planning activity in which they must demonstrate their understanding of the concepts covered in class.
F. Murray

15.375 Development Ventures
(Same subject as EC.731J, MAS.665J)
Prereq: Permission of instructor
G (Fall)
3-0-9 H-LEVEL Grad Credit
See description under subject MAS.665J.
A. Pentland, J. Bonsen

15.376 Media Ventures
(Same subject as MAS.664J)
Prereq: None
G (Spring)
3-0-6
Can be repeated for credit
See description under subject MAS.664J.
A. Pentland, J. Bonsen

15.377 Linked Data Ventures
(Same subject as 6.932)
Prereq: 6.005, 6.033, or permission of instructor
G (Spring)
3-0-9 H-LEVEL Grad Credit
See description under subject 6.932.
T. Berners-Lee, L. Kagal, K. Rae, R. Sturdevant

15.378 Building an Entrepreneurial Venture: Advanced Tools and Techniques (New)
(Subject meets with 15.370)
Prereq: Permission of instructor
G (Fall, Spring)
3-1-8 H-LEVEL Grad Credit
Project-based class in which students use entrepreneurial techniques to build innovation-driven ventures in a time-compressed but robust setting. Applies fundamental concepts in greater depth and introduces tools and techniques. Students apply these concepts to specific venture-development projects. Designed to help students who want to prototype their potential new venture. Includes designing, developing, and testing the underlying product/service for the new venture. Students taking graduate version complete additional assignments. Application required; consult instructor.
W. Aulet, J. Baum, E. Chen

15.379 New Enterprises (New)
(Subject meets with 15.390)
Prereq: None
U (Fall, Spring)
2-1-6
Covers the process of identifying and quantifying market opportunities, then conceptualizing, planning, and starting a new, technology-based enterprise. Topics include opportunity assessment, the value proposition, the entrepreneur, legal issues, entrepreneurial ethics, the business plan, the founding team, seeking customers, and raising funds. Students develop detailed business plans for a start-up. Intended for students who want to start their own business, further develop an existing business, be a member of a management team in a new enterprise, or better understand the entrepreneur and
the entrepreneurial process. Meets with 15.390 when offered concurrently.

W. Aulet, C. Catalini

15.381 The Human Side of Technology
Prereq: Permission of instructor
G (IAP) 2-1-6

Examines the human side of managing technical professionals and teams throughout innovative processes, including micro and macro issues. Topics include motivational commitment and performance; dealing with complacency; understanding the relationships among innovation, change, motivation, and uncertainty; managing creative individual contributors; effective recognition and reward systems; leading decision making processes; staffing critical roles and cross-functional relationships; information/knowledge transfer; organizational diagnosis for change. Restricted to SDM students; others with permission of instructor.

Staff

15.385 Social Innovation and Entrepreneurship
Prereq: 15.911
Acad Year 2014–2015: Not offered
Acad Year 2015–2016: G (Spring) 3-0-6 H-LEVEL Grad Credit

Students work individually or in teams to develop a business plan for an enterprise (for- or non-profit) to solve a social problem. They also have the opportunity to develop their skills by working on an existing social venture. Examines the theory and practice of social entrepreneurship and innovation within various social issues and topics, including social impact markets, performance measurement, and theory of change. Students gain practical knowledge on how to identify potential social venture opportunities; develop skills and competencies for creating, developing and implementing ideas; and measure the success and value of a young enterprise.

Staff

15.386 Managing in Adversity
Prereq: None
G (Fall, Spring; second half of term) 3-0-3

Provides the skills required for a CEO to deal with complex problems under highly adverse conditions. Cases and guest CEO speakers present real-life, high adversity situations that students then deal with through role play. Emphasis on how to quickly define the issues at stake, determine and evaluate the options, and then take critical and precipitous actions to address the situation. No listeners.

P. Kurzina, N. Thompson

15.387 Entrepreneurial Sales
Prereq: None
G (Fall, Spring) 3-0-9

Practical and tactical ins and outs of how to sell technical products to a sophisticated marketplace. How to build and manage a sales force; building compensation systems for a sales force, assigning territories, resolving disputes, and dealing with channel conflicts. Focus on selling to customers, whether through a direct salesforce, a channel salesforce, or building an OEM relationship. Half term course.

L. Shipley

15.389 Global Entrepreneurship II: Global Entrepreneurship Lab
Prereq: None. Coreq: 15.395
G (Fall, IAP; second half of term) 2-0-7

Building upon 15.395, discusses the issues and policies that affect the climate for innovation and start-up success around the world. Enables teams of students to work with the top management of global start-ups and gain experience in running, and consulting to, a new enterprise outside the US. Focuses on start-ups operating in emerging markets throughout the world. Restricted to graduate students.

Y. Huang, S. Johnson

15.390 New Enterprises
(Subject meets with 15.379)
Prereq: None
G (Fall, Spring) 2-1-6

Covers the process of identifying and quantifying market opportunities, then conceptualizing, planning, and starting a new, technology-based enterprise. Topics include opportunity assessment, the value proposition, the entrepreneur, legal issues, entrepreneurial ethics, the business plan, the founding team, seeking customers and raising funds. Students develop detailed business plans for a start-up. Intended for students who want to start their own business, further develop an existing business, be a member of a management team in a new enterprise, or better understand the entrepreneur and the entrepreneurial process. Meets with 15.379 when offered concurrently.

W. Aulet, C. Catalini

15.392 Designing, Developing and Launching Successful Products in an Entrepreneurial Environment: Tools and Techniques (New)
Prereq: 15.371 or 15.390
G (Spring; first half of term) 3-0-3 H-LEVEL Grad Credit

Students develop and help market an innovation-driven product that may form the basis of an entrepreneurial start-up, but also could be part of a larger entity. Students use tools and techniques to effectively and efficiently drive product development (hardware or software) in a fast-paced environment, including how to iterate their way to product/market fit, how to generate interest in their start-up through the internet, and how to select the right business model for their market.

Application required.

B. Halligan, P. English

15.394 Dilemmas in Founding New Ventures
Prereq: None
G (Spring) 3-0-6

Explores key organizational decisions that have far-reaching consequences for founders and their ventures. Though a series of cases, readings, and simulations, students examine five founder’s dilemmas: whether and when to found; whom to include in the founding team; how to allocate equity among co-founders; whether to involve external investors; when and how to exit. Aims to equip students with tools and frameworks to help them understand the implications of early decisions, and to build enduring resources that enable the venture to execute even if the original plan changes substantially.

M. Marx

15.395 Global Entrepreneurship I:
Entrepreneurship Without Borders
Prereq: None
G (Fall; first half of term) 3-0-3

Examines opportunities and problems for entrepreneurs outside the US, including in Europe, Latin America, and Asia. Covers the linkages between the business environment, the institutional framework, and new venture creation. Students apply analytics of finance for start-ups in emerging markets. In addition to discussing a range of global entrepreneurial situations, student groups pick one particular cluster on which to focus and to understand what further development would entail. Classroom interactions are based primarily on case studies.

S. Johnson, V. Karplus
15.396 Seminar in Entrepreneurship
Prereq: Permission of instructor
Acad Year 2014–2015: Not offered
Acad Year 2015–2016: G (Fall, IAP, Spring)
Units arranged
Group study of current topics related to entrepreneurship.
W. Aulet

15.397 Seminar in Entrepreneurship
Prereq: Permission of instructor
Acad Year 2014–2015: Not offered
Acad Year 2015–2016: G (Fall, IAP, Spring)
Units arranged H-LEVEL Grad Credit
Can be repeated for credit
Group study of current topics related to high-tech entrepreneurship.
Staff

15.398 Corporations at the Crossroads: The CEO Perspective
Prereq: 15.900 or permission of instructor
G (Spring)
2-0-4 H-LEVEL Grad Credit
Focus is on the role of the CEO. Students learn from some of the world's leading CEOs who are invited to speak in the class. Topics include the job of the CEO, corporate strategy, and career learnings and advice. Particular emphasis on how the CEO is reacting to the crossroads where he currently finds his company. Sessions are highly interactive, with questions from the students. Before each class, a small group of students has dinner with the guest CEO, a truly unique experience for the students.
P. Kurzina

15.399 Entrepreneurship Lab
Prereq: None
G (Fall, Spring)
2-9-1
Teams of science, engineering, and management students participate actively one day a week on-site with the top management of high tech start-ups in order to gain experience in starting and running a new venture. Student projects focus on one urgent aspect of the start-up, such as selection of target market, design of marketing strategy, choice of sales approach to initial customers, etc. In addition to the regular MIT registration process, students should register at the course website one month before class to facilitate formation of student teams and matching of teams with potential host companies.
C. Catalini, J. Dougherty

15.401 Finance Theory I
(Subject meets with 15.411)
Prereq: None
G (Fall, Spring)
4-0-5
Core theory of modern financial economics and financial management, concentrating on capital markets and investments. Topics include functions of capital markets and financial intermediaries, asset valuation, fixed income securities, common stocks, capital budgeting, diversification and portfolio selection, equilibrium pricing of risky assets, the theory of efficient markets, and an introduction to derivatives. Students taking graduate version complete additional assignments.
Consult K. Nixon

15.402 Finance Theory II
(Subject meets with 15.412, 15.5418)
Prereq: 15.401
G (Fall, Spring)
3-0-6 H-LEVEL Grad Credit
Continuation of 15.401, concentrating on corporate financial management. Topics include capital budgeting, investment decisions and valuation; working capital management, security issues; dividend policy; optimal capital structure; and real options analysis. Students taking graduate version complete additional assignments.
P. Asquith, R. Iyer, A. Malenko

15.403 Introduction to the Practice of Finance
Prereq: None
G (Fall)
2-0-1
Seminar exposes students to some of the basic institutions and practices of the financial industry. Includes panel discussions with representatives from leading financial institutions, MIT alumni currently engaged in the financial services sector, and leading industry vendors. Restricted to first-year Finance track MBA students.
J. Parsons

15.410 Financial Management
Prereq: 15.401
3-0-6 H-LEVEL Grad Credit
Provides a rigorous introduction to the fundamentals of modern financial analysis and applications to business challenges in capital budgeting, project evaluation, corporate investment and financing decisions, and basic security analysis and investment management. Focuses on five key sections: an introduction to the financial system, the unifying principles of modern finance, and fundamental present-value relations; valuation models for both stocks and bonds and capital budgeting; methods for incorporating uncertainty into valuation models; valuation of derivative securities; and applications to corporate financial decisions. Restricted to MIT Sloan Fellows in Innovation and Global Leadership.
D. Lucas

15.411 Finance Theory I
Prereq: None
G (Summer)
6-0-9
Core theory of modern financial economics and financial management, concentrating on capital markets and investments. Topics include functions of capital markets and financial intermediaries, asset valuation, fixed income securities, common stocks, capital budgeting, diversification and portfolio selection, equilibrium pricing of risky assets, the theory of efficient markets, and an introduction to derivatives. Students taking graduate version complete additional assignments.
Deborah A. Drosdick, Daniel P. McSweeney, and Richard I. Lipton
its applications. Restricted to students in the Master of Finance Program.
L. Kogan, J. Wang

15.416j Introduction to Financial Economics
(Same subject as 14.416j)
Prereq: 14.121, 14.122
G (Fall)
4-0-8 H-LEVEL Grad Credit

Foundations of modern financial economics; individuals’ consumption and portfolio decisions under uncertainty; valuation of financial securities. Topics include expected utility theory; stochastic dominance; mutual fund separation; portfolio frontiers; capital asset pricing model; arbitrage pricing theory; Arrow-Debreu economies; consumption and portfolio decisions; consumption beta models; spanning; options; market imperfections; no-trade theorems; rational expectations; financial signaling. Primarily for doctoral students in accounting, economics, and finance.
S. A. Ross

15.5418 Special Subject: Laboratory in Corporate Finance (New)
(Subject meets with 15.402, 15.412)
Prereq: None
U (Fall, Spring)
4-6-5 Institute LAB

Covers capital budgeting, investment decisions and valuation; working capital management, security issues; dividend policy; optimal capital structure; and real options analysis. Laboratory involves projects of an applied nature in which students either conduct an event study and analyze its impact on firm capital market value, or conduct a merger model between two firms of the student’s choosing. Emphasizes use of research databases to test hypotheses. Instruction and practice in communication includes report writing, team projects, and oral and visual presentation. Licensed as an Institute Laboratory subject, and as a CI-M subject for Course 15 students, for 2014–2015.
S. Myers

15.426j Real Estate Finance and Investment
(Same subject as 11.431j)
Prereq: Permission of instructor
G (Fall)
4-0-8 H-LEVEL Grad Credit

See description under subject 11.431j.
D. Geltner

15.427j Real Estate Capital Markets
(Same subject as 11.432j)
Prereq: 11.431; 15.402 or 15.414
G (Spring; first half of term)
2-0-4 H-LEVEL Grad Credit

See description under subject 11.432j.
D. Geltner

15.428j Tools for Analysis: Design for Real Estate and Infrastructure Development
(Same subject as 11.434j, ESD.712j)
Prereq: None
G (Spring; second half of term)
2-0-4

See description under subject 11.434j.
D. Geltner, R. de Neufville

15.429j Securitization of Mortgages and Other Assets
(Same subject as 11.353j)
Prereq: 15.426, 15.401, or permission of instructor
G (Spring)
3-0-6 H-LEVEL Grad Credit

Investigates the economics and finance of securitization, a practice that allows illiquid assets to be transformed into more liquid securities. Considers the basic mechanics of structuring deals for various asset-backed securities. Investigates the pricing of pooled assets, using Monte Carlo and other option pricing techniques, as well as various trading strategies used in these markets.
W. Torous

15.431 Entrepreneurial Finance
Prereq: 15.402, 15.414, or 15.415
G (Spring)
3-0-6 H-LEVEL Grad Credit

Examines the elements of entrepreneurial finance, focusing on technology-based start-up ventures, and the early stages of company development. Addresses key questions which challenge all entrepreneurs: how much money can and should be raised; when should it be raised and from whom; what is a reasonable valuation of the company; and how funding, employment contracts and exit decisions should be structured. Aims to prepare students for these decisions, both as entrepreneurs and venture capitalists. In-depth analysis of the structure of the private equity industry.
A. Schoar

15.433 Investments
Prereq: 15.401, 15.414, or 15.415
G (Fall)
3-0-6 H-LEVEL Grad Credit

Financial theory and empirical evidence for making investment decisions. Topics include portfolio theory; equilibrium models of security prices, including the capital asset pricing model and the arbitrage pricing theory; the empirical behavior of security prices; market efficiency; performance evaluation; and behavioral finance. Preference to Course 15 students.
Staff

15.434 Advanced Corporate Finance
Prereq: 15.402, 15.412, 15.414, or 15.415
G (Fall, Spring)
3-0-6 H-LEVEL Grad Credit

Covers advanced topics in corporate finance, including complex valuations, static and dynamic capital structure, risk management, and real options. Also considers security design, restructuring, bankruptcy, corporate control and governance, and international finance issues.
N. Bergman, N. Gregory

15.437 Options and Futures Markets
Prereq: 15.401, 15.414, or 15.415
G (Fall, Spring)
3-0-6 H-LEVEL Grad Credit

Examines the economic role of options and futures markets. Topics: determinants of forward and futures prices, hedging and synthetic asset creation with futures, uses of options in investment strategies, relation between puts and calls, option valuation using binomial trees and Monte Carlo simulation, implied binomial trees, advanced hedging techniques, exotic options, applications to corporate securities and other financial instruments.
J. C. Cox, H. Chen

15.438 Fixed Income Securities and Derivatives
Prereq: 15.401, 15.414, or 15.415
G (Spring)
3-0-6 H-LEVEL Grad Credit

Designed for students seeking to develop a sophisticated understanding of fixed income valuation and hedging methods, and to gain familiarity with the major markets and instruments. Emphasizes tools for quantifying, hedging, and speculating on risk. Topics include duration; convexity; modern approaches to modeling the yield curve; interest rate forwards, futures, swaps and options; credit risk and credit derivatives; mortgages; and securitization. 15.437 strongly recommended.
D. Lucas
15.439 Investment Management  
Prereq: 15.401, 15.414, or 15.415  
G (Spring)  
3-0-6 H-LEVEL Grad Credit  
Studies financial markets, principally equity markets, from an investment decision-making perspective. Develops a set of conceptual frameworks and tools, and applies them to particular investments and investment strategies chosen from a broad array of companies, securities, and institutional contexts. Focuses strongly on case studies; students are expected to prepare each case before class and participate extensively in discussions.  
R. Cohen

15.440J Advanced Financial Economics I  
(Same subject as 14.440J)  
Prereq: 15.416  
G (Fall)  
5-0-7 H-LEVEL Grad Credit  
Covers advanced topics in the theory of financial markets with a focus on continuous time models. Topics include multiperiod securities markets and martingales; pricing of contingent securities such as options; optimal consumption and portfolio problems of an individual; dynamic equilibrium theory and the intertemporal capital asset pricing model; term structure of interest rates; and equilibrium with asymmetric information, transaction costs, and borrowing constraints. Primarily for doctoral students in finance, economics, and accounting.  
H. Chen, L. Kogan

15.441J Advanced Financial Economics II  
(Same subject as 14.441J)  
Prereq: 14.121, 14.122, or 15.416J  
G (Spring)  
3-0-9 H-LEVEL Grad Credit  
Surveys selected topics in current advanced research in corporate finance. Theoretical and empirical analyses of corporate financing and investment decisions. Some background in information economics and game theory is useful. Primarily for doctoral students in accounting, economics, and finance.  
Staff

15.442J Advanced Financial Economics III  
(Same subject as 14.442J)  
Prereq: 14.382, 15.416J, or permission of instructor  
G (Spring)  
3-0-9 H-LEVEL Grad Credit  
Recent empirical methods in finance, including: the estimation and testing of market efficiency; the random walk hypothesis; the CAPM/APT; various term structure models; option pricing theories; and market microstructures; performance evaluation; bond rating and default analysis; event study methodology; continuous-time econometrics; and general time series methods. An empirical term project is required. Some econometric background and rudimentary computer programming skills are assumed. Primarily for doctoral students in finance, accounting, and economics.  
Staff

15.444 International Finance: Corporate Finance  
Prereq: 15.402, 15.414, or 15.415  
Acad Year 2014–2015: Not offered  
Acad Year 2015–2016: G (Spring)  
3-0-6 H-LEVEL Grad Credit  
Addresses issues relating to valuation, risk management, financing and contractual design for firms operating in international markets, providing exposure to emerging markets. Students analyze how risk and cash flows should be evaluated in environments with varying levels of risk, such as currency fluctuation, sovereign default, weak property rights, etc. Discusses how certain types of risk can be eliminated or managed through the appropriate design of financial contracts, and how institutional differences across countries shape the structure and efficacy of private equity contracts. Other topics include firm policy and international tax regimes, microfinance, and valuing social return. Concludes with a discussion on the impact of global financial crises on firm financial policy.  
Staff

15.445 Mergers and Acquisitions: The Market for Corporate Control  
Prereq: 15.402, 15.414, 15.515, or 15.516  
G (Spring; partial term)  
2-0-4 H-LEVEL Grad Credit  
Examines a corporation’s decision to acquire another firm or the decision to oppose being acquired. Explores three aspects of the merger and acquisition process: the strategic decision to acquire, the valuation decision of how much to pay, and the financing decision on how to fund the acquisition. Sessions alternate between discussions of academic readings and applied cases.  
N. Gregory

15.447 International Finance: Capital Markets  
Prereq: 15.401, 15.414, or 15.415  
G (Spring)  
3-0-6 H-LEVEL Grad Credit  
Students analyze international financial markets and instruments. Covers topics such as currency markets, exchange rate determination, statistical properties of exchange rate; currency futures and options; hedging foreign exchange risk and managing foreign exchange exposure; international portfolio management; international asset market implications of bubbles, crashes, and crises.  
J. Parker

15.448–15.449 Seminar in Finance  
Prereq: 15.402 or 15.414  
G (Fall, Spring)  
Units arranged H-LEVEL Grad Credit  
Can be repeated for credit  
Group study of current topics related to finance.  
J. C. Cox

15.450 Analytics of Finance  
Prereq: 15.401, 15.414, or 15.415  
G (Spring)  
5-0-7 H-LEVEL Grad Credit  
Provides a rigorous foundation for the main analytical techniques and quantitative methods necessary to succeed in the financial services industry. Topics include discrete and continuous asset pricing models, financial econometrics, machine learning methods, and dynamic optimization. Examples of applications include portfolio management, risk management, derivative pricing, and algorithmic trading.  
A. Kirilenko

15.451 Proseminar in Capital Markets/Investment Management  
Prereq: 15.401, 15.414, or 15.415  
G (Fall)  
2-0-4 H-LEVEL Grad Credit  
Provides a unique opportunity to tackle original research problems in capital market analysis and investment management that have been posed by leading experts from the financial community. Students are assigned to teams, and each team is assigned one such problem. Teams present their solutions at a seminar which is attended by representatives of the sponsoring organization and open to the entire MIT community. Not open to students from other institutions.  
M. Kritzman

15.452 Proseminar in Corporate Finance/Investment Banking  
Prereq: 15.402, 15.414, or 15.415  
G (Fall)  
3-0-3 H-LEVEL Grad Credit  
Bridges the gap between finance theory and finance practice, and introduces students to the broader financial community. Students participate in a series of proseminars with industry guest speakers. Each guest, in collaboration with finance faculty, provides a problem and
materials to a team of students. Each team then prepares a report and presents their analysis to the guest speaker and other students for evaluation and feedback. Not open to students from other institutions.

J. Parsons

15.460 Applied Quantitative Finance
Prereq: 15.401, 15.414, or 15.415
G (Spring)
4-0-5 H-LEVEL Grad Credit

Covers practical aspects of the analytics of finance from the perspective of a quantitative investment manager. Develops an understanding of stochastic processes, option pricing, investment strategies, backtest simulation, data and computational architecture, portfolio construction, trading implementation, and risk management within the context of specific quantitative trading strategies. Follows the natural sequence of research, development, testing, and implementation. Emphasizes financial applications, but also covers mathematical and statistical techniques in some depth, along with their computational implementation in software and the use of real-world market data.

P. Mende

15.466 Valuation
Prereq: 15.141, 15.402, 15.414, 15.415, 15.515, or 15.516
Acad Year 2014–2015: Not offered
Acad Year 2015–2016: G (Spring)
4-0-5 H-LEVEL Grad Credit

Project-based subject in which students work in teams to prepare comprehensive and detailed valuations of several major investments. Develops a deeper and more detailed understanding of valuation methods and concepts, including estimation of industry betas and costs of capital, discounting the after-tax WACC vs. the adjusted present value (APV) method, using forward and futures prices, R&D and CAPEX leverage and the two-discount-rate method, and valuing debt-equivalent cash flows and certainty equivalents. Guest speakers brief the class on some of the investments. Preference to MBA and MFin students.

S. Myers

15.466 Functional and Strategic Finance
Prereq: 15.433 or 15.437
G (Spring)
3-0-6 H-LEVEL Grad Credit

Organized around applying finance science and financial engineering in the design and management of global financial institutions, markets, and the financial system—the approach used to understand the dynamics of institutional change and the design of financial products and services. Examines the needs of government as user, producer and overseer of the financial system, including the issues surrounding measuring and managing risks in financial crises. Develops the necessary tools of derivative pricing and risk measurement, portfolio analysis and risk accounting, and performance measurement to analyze and implement concepts and new product ideas. Applies these tools to analyze aspects of the financial crisis of 2007-2009. Preference to MBA and MFin students.

R. Merton

15.467 Retirement Finance, Lifecycle Investing, and Asset Management
Prereq: 15.433
G (Spring)
3-0-6 H-LEVEL Grad Credit

Organized around applying finance science and financial engineering in three related financial activities: retirement finance, lifecycle investing, and asset management. Develops the necessary tools of derivative pricing and risk measurement, portfolio analysis and risk accounting, and performance measurement to analyze and implement concepts and new product ideas. Students should be familiar with basic portfolio-selection theory, CAPM, options, futures, swaps and other derivative securities. Preference to MBA and MFin students.

R. Merton

15.481J Financial Market Dynamics and Human Behavior
(Same subject as 6.935J)
Prereq: 15.401, 15.414, or 15.415
Acad Year 2014–2015: Not offered
Acad Year 2015–2016: G (Spring)
4-0-5 H-LEVEL Grad Credit

Develops a new perspective on the dynamics of financial markets and the roles that human behavior and the business environment play in determining the evolution of behavior and institutions. Draws on a variety of disciplines to develop a more complete understanding of human behavior in the specific context of markets and other economic institutions. Incorporates practical applications from financial markets, the hedge fund industry, private equity, government regulation, and political economy. Students use ideas from this new perspective to formulate several new hypotheses regarding recent challenges to traditional economic thinking.

A. Lo

15.490 Practice of Finance: Private Equity and Hedge Funds
Prereq: 15.402, 15.414, or 15.415
G (Spring; second half of term)
2-0-1 [P/D/F] H-LEVEL Grad Credit

Introduction to the field of alternative investments—principally private equity and hedge funds—within the context of the larger investment domain. Covers the structure and operation of alternative funds, valuation, and topics such as deal sourcing, exits, value added, and alpha strategies. Discusses the evolution of the field as well as what the future may bring. Summarizes subfields such as venture capital, leveraged buyouts, distressed investing, and the spectrum of hedge funds. Addresses investor perspectives, portfolio construction and risk management with alternatives. Encourages active student participation, and includes a project and reading list.

P. Cooper

15.491 Practice of Finance: Advanced Corporate Risk Management
Prereq: 15.402, 15.414, or 15.415
G (Spring)
3-0-6 H-LEVEL Grad Credit

Focuses on how corporations make use of the insights and tools of risk management. Taught from the perspective of potential end-users of derivatives (not the dealer), such as manufacturing corporations, utilities, and software firms. Topics include how companies manage risk, instruments for hedging, liability management and organization, and governance and control. 15.437 recommended.

J. Parsons

15.493 Practice of Finance: Perspectives on Investment Management
Prereq: 15.402, 15.414, or 15.415
G (Fall, Spring; second half of term)
3-0-3 [P/D/F] H-LEVEL Grad Credit

Provides an overview of the investment management industry and an introduction to business fundamentals and valuation. Students read company analyst reports, write papers analyzing various companies, and complete an in-depth company analysis as a final paper. Includes presentations by outside speakers in the investment management industry. Class attendance is mandatory.

J. Shames
15.495 Practice of Finance: Quantitative Investment Management
Prereq: 15.402, 15.414, or 15.415
Acad Year 2014–2015: Not offered
Acad Year 2015–2016: G (Fall)
3-0-3 H-LEVEL Grad Credit

Explores facets of quantitative investment management, such as alpha models and data analysis, risk management, portfolio construction and trading, and limitations of a quantitative approach. Focuses primarily on foreign exchange and fixed income markets; may also address examples from equity and commodity markets. Alpha models organized as case studies employing value/mean-reversion, momentum, and carry strategies. Students use market and economic data to challenge theoretical formulations. Problem sets and team projects involve MATLAB programming to solve practical problems faced in building and running a quantitative hedge fund.

M. Mueller

15.496 Practice of Finance: Data Technologies for Quantitative Finance
Prereq: 15.401, 15.414, or 15.415
G (Fall)
4-0-5 H-LEVEL Grad Credit

Introduces financial market data architecture and design, with applications to asset pricing, quantitative investment strategies, portfolio management, risk management, and high-frequency trading. Studies how data relationships are structured and how to use modern tools and technologies to manipulate, manage, and analyze financial data sets. Uses real-world data, applications, and cases to illustrate principles and provide practical experience.

P. Mende

ACCOUNTING

15.501 Corporate Financial Accounting
(Subject meets with 15.516)
Prereq: None
U (Fall, Spring)
3-0-9

Preparation and analysis of financial statements. Focuses on why financial statements take the form they do, and how they can be used in evaluating corporate performance and solvency and in valuation of corporate securities. Introduces concepts from finance and economics (e.g., cash flow discounting and valuation) and explains their relation to, and use in, accounting. Students taking the graduate version complete additional assignments. Permission of Sloan Educational Services required for all cross-registrants.

N. Shroff

15.511 Financial Accounting
Prereq: Permission of instructor
G (Summer)
3-0-6 H-LEVEL Grad Credit

Credit cannot also be received for 15.720

Introduces concepts of corporate financial accounting and reporting of information widely used in making investment decisions, corporate and managerial performance assessment, and valuation of firms. Students perform economics-based analysis of accounting information from the viewpoint of the user (especially senior managers) rather than the preparer (the accountant). Restricted to Sloan Fellows in Innovation and Global Leadership.

J. Weber

15.514 Financial and Managerial Accounting
Prereq: None
G (Summer)
3-0-9

Intensive introduction to the preparation and interpretation of financial information for investors (external users) and managers (internal users) and to the use of financial instruments to support system and project creation. Adopts a decision-maker perspective on accounting and finance. Restricted to System Design and Management students.

S. Keating

15.515 Financial Accounting
Prereq: Permission of instructor
G (Fall)
4-0-5 H-LEVEL Grad Credit

An intensive introduction to the preparation and interpretation of financial information. Adopts a decision-maker perspective of accounting by emphasizing the relation between accounting data and the underlying economic events generating them. Class sessions are a mixture of lecture and case discussion. Assignments include textbook problems, analysis of financial statements, and cases. Restricted to first-year Sloan master’s students.

J. Core, R. Verdi

15.516 Corporate Financial Accounting
(Subject meets with 15.501)
Prereq: Permission of instructor
G (Fall, Spring, Summer)
3-0-9

See description under subject 15.501. If subject is oversubscribed, priority is given to Course 15 students.

N. Shroff

15.518 Taxes and Business Strategy
Prereq: 15.501, 15.511, 15.515, or 15.516
G (Spring)
3-0-6 H-LEVEL Grad Credit

Provides a conceptual framework for thinking about taxation. Topics include the taxation of various investments and types of compensation; retirement planning; considerations of choosing an organizational form when starting a business; the various methods of merging, acquiring, and divesting business entities; international tax planning rules and strategies; and high wealth planning and the estate tax. Applies current debates on various tax policy options to class discussions. Intended for investment bankers and consultants who need to understand how taxes affect the structure of deals, managers and analysts who need to understand how firms strategically respond to taxes, and entrepreneurs who want to structure their businesses and finances in a tax-advantaged manner.

M. Hanlon

15.521 Management Accounting and Control
Prereq: 15.501, 15.511, 15.515, or 15.516
G (Spring)
3-0-6 H-LEVEL Grad Credit

Introduces participants to the language and methodologies of internal accounting practices. Topics include cost allocations, absorption costing, standard costing, transfer pricing, and performance measurement and evaluation. Major focus is on identifying which information is useful and which is useless and potentially misleading.

S. Keating

15.522 Security Design and Corporate Financing
Prereq: 15.401; 15.402 or 15.414; 15.433 or 15.434
Acad Year 2014–2015: Not offered
Acad Year 2015–2016: G (Spring)
3-0-6 H-LEVEL Grad Credit

Examines how corporations choose securities and markets to finance themselves. These are decisions which the firm must make after it has determined its financial policies including capital structure and dividend policy. Subject
MANAGEMENT

15.535 Business Analysis Using Financial Statements
Prereq: 15.501, 15.511, 15.515, or 15.516; 15.401, 15.411, or 15.414
G (Fall, Spring)
3-0-6 H-LEVEL Grad Credit
Primary learning objective is the strategic, financial, and accounting analysis of a company’s profitability and riskiness by means of financial statement data. A second, and related, learning objective is the valuation of a company using financial statement data. Concepts are applied to a number of decision making contexts, including securities analysis, credit analysis, merger analysis, and company performance assessment.
C. Noe

15.539 Doctoral Seminar in Accounting
Prereq: 15.515
G (Fall, Spring)
Units arranged H-LEVEL Grad Credit
Can be repeated for credit
Designed primarily for doctoral students in accounting and related fields. The reading list consists of accounting research papers. Objective is to introduce research topics, methodologies, and developments in accounting, and train students to do independent research.
J. Weber

INFORMATION TECHNOLOGIES

15.561 Information Technology Essentials
Prereq: None
G (Spring)
3-0-6
Examines technology concepts and trends underlying current and future uses of information technology (IT) in business. Emphasis on networks and distributed computing, including the web. Other topics include hardware and operating systems, software development tools and processes, relational databases, security and cryptography, enterprise applications, and electronic commerce. Exposure to web, database, and graphical user interface (GUI) tools. Primarily for Sloan master’s students with limited IT background.
T. W. Malone

15.564 IT Essentials II: Advanced Technologies for Digital Business in the Knowledge Economy
Prereq: None
G (Spring)
3-0-6
Technologies and concepts for next generation knowledge management and web e-business, including semantic web and web services. Business applications for use in the next two to seven years, including: e-commerce, marketing, finance, trust/security, health/biomedical, mobile. Strategic impacts and entrepreneurial opportunities. Core skills for identifying and evaluating technologies and their business potential, and for managing innovative IT-dependent projects. Overall emphasis on business process automation and e-services.
S. Madnick

15.565J Digital Evolution: Managing Web 3.0
(Same subject as ESD.565J)
Prereq: Permission of instructor
G (Spring)
3-0-6 H-LEVEL Grad Credit
Examines the evolution from Web 2.0, with its emphasis on interactivity through online collaboration and sharing among users (primarily through social networking sites, wikis and communication tools), to Web 3.0, which focuses on high proactivity, transforming the Web into a database, and the leveraging of artificial intelligence technologies, such as the Semantic Web. Introduces Management 3.0 and the range of new Web technologies, applications, and business opportunities and challenges that it supports. Includes case studies, industry and academic speakers, discussion of basic principles, and a team project.
S. Madnick

15.567 The Economics of Information: Strategy, Structure and Pricing
Prereq: Permission of instructor
G (Fall; first half of term)
3-0-6 H-LEVEL Grad Credit
Analysis of the underlying economics of information with management implications. Studies effects of digitization and technology on industry, organizational structure, and business strategy. Examines pricing, bundling, and versioning of digital goods, including music, video, software, and communication services. Considers the managerial implications of social networks, search, targeted advertising, personalization, privacy, network externalities, open source, and alliances. Discusses key principles. Includes case studies, industry speakers, and a team project.
E. Brynjolfsson

15.569 Leadership Lab: Leading Sustainable Systems
Prereq: Permission of instructor
G (Fall, IAP)
6-0-9 H-LEVEL Grad Credit
Addresses key sustainability challenges faced by business and society. Explores alternative ways to view organizations that draw attention to cross-boundary interdependencies and help leaders at all levels develop their capacity to collaborate for systemic change. Develops skills to help students surface and reflect on mental models and practices that keep organizations stuck in unproductive system dynamics. Weaves together theory, experiential practices, guest speakers, and action learning projects that enable teams of students to work with organizations on systemic change initiatives.
P. Senge, W. Orlikowski

15.570 Digital Marketing and Social Media Analytics (New)
Prereq: None
G (Fall; second half of term)
3-0-3
Provides a detailed, applied perspective on the theory and practice of digital marketing and social media analytics in the age of big data. Covers concepts such as the difference between earned and paid media, predictive modeling for ad targeting and customer relationship management, measuring and managing product virality, viral product design, native advertising, and engaging the multichannel experience. Stresses the theory and practice of randomized experimentation, AB testing and the importance of causal inference for marketing strategy. Combines lectures, case studies, and guest speakers with relevant industry experience that speak directly to the topics at hand.
S. Aral

15.571 Enterprise Transformations in the Digital Economy
Prereq: None
G (Spring)
3-0-6
Designed to help students understand how the digital economy forces companies to rethink their business strategies—and architect their processes, products, and information. Explores how firms use technology to simplify unnecessary complexity while capitalizing on the value-adding complexity inherent to more global, more integrated, more connected enterprises. Includes case studies about large enterprises using IT to transform how they do business, with guest executives from those enterprises responding to student discussions. Student
teams work on consulting projects for major corporations.
J. W. Ross

15.575 Economics of Information and Technology in Markets and Organizations
Prereq: Permission of instructor
Acad Year 2014–2015: Not offered
Acad Year 2015–2016: G (Fall)
3-0-9 H-LEVEL Grad Credit
Builds upon relevant economic theories and methodologies to analyze the changes in organizations and markets enabled by IT, especially the internet. Typical perspectives examined include industrial organization and competitive behavior, price theory, information economics, intangible asset valuation, consumer behavior, search and choice, auctions and mechanism design, transactions cost economics and incomplete contracts theory, and design of empirical studies. Extensive reading and discussion of research literature aimed at exploring the application of these theories to business issues and challenges raised by the internet and related technologies. Primarily for doctoral students.
E. Brynjolfsson

15.576 Research Seminar in Information Technology and Organizations: Social Perspectives
Prereq: Permission of instructor
G (Fall, Spring)
3-0-9 H-LEVEL Grad Credit
Examines the assumptions, concepts, theories, and methodologies that inform research into the social aspects of information technology. Extensive reading and discussion of research literature aimed at exploring micro, group, and macro level social phenomena surrounding the development, implementation, use and implications of information technology in organizations. Primarily for doctoral students.
W. Orlikowski

15.578 Global Information Systems: Strategic, Technical, and Organizational Perspectives
Prereq: Permission of instructor
Acad Year 2014–2015: Not offered
Acad Year 2015–2016: G (Spring)
3-0-6 H-LEVEL Grad Credit
S. E. Madnick

15.579–15.580 Seminar in Information Technology
Prereq: Permission of instructor
Acad Year 2014–2015: Not offered
Acad Year 2015–2016: G (Fall, Spring)
3-0-6 H-LEVEL Grad Credit
Can be repeated for credit
Group study of current topics related to information technology.
S. E. Madnick, T. W. Malone, W. Orlikowski

15.599 Workshop in Digitization
Prereq: Permission of instructor
Acad Year 2014–2015: Not offered
Acad Year 2015–2016: G (Fall)
2-0-4
Can be repeated for credit
Presentations by faculty, doctoral students, and guest speakers of ongoing research relating to current issues in digitization, technology and the changing economics of work, as well as discussions of key research papers in the field. Specific topics determined by the interest of participants and by new and important directions in digitization, information technology and information economics. Background readings, regular assignments and active participation by students expected. Preference to doctoral students.
E. Brynjolfsson

LAW

15.615 Basic Business Law for the Entrepreneur and Manager
Prereq: None
G (Fall, Spring)
3-0-6
Broad-gauged introduction to business law designed to prepare managers to exercise judgment and leadership when confronting key law-sensitive issues of importance to their organizations and their own careers. Topics include contracts, liability, employment, changing jobs, intellectual property, business disputes, bankruptcy and reorganization, acquisitions, regulatory compliance, and corporate crime. The distinctive feature of 15.615 is an additional focus on the issues faced by entrepreneurs in organizing and financing a new venture.
J. Akula

15.616 Basic Business Law, Tilted Towards Key Emerging Issues
Prereq: None
Acad Year 2014–2015: Not offered
Acad Year 2015–2016: G (Fall)
3-0-6
Broad-gauged introduction to business law designed to prepare managers to exercise judgment and leadership when confronting key law-sensitive issues of importance to their organizations and their own careers. Topics include contracts, liability, employment, changing jobs, intellectual property, business disputes, bankruptcy and reorganization, acquisitions, regulatory compliance, and corporate crime. The distinctive feature of 15.616 is an additional focus on newly-emerging, law-sensitive issues of key significance to businesses. Those topics vary from year to year; some recent examples include doing business in the BRIC nations, and the legal framework of social media.
J. Akula

15.617 Deals, Finance, and the Law
Prereq: None
G (Spring)
3-0-6
Provide managers with the skills needed to confront key law-sensitive issues of importance to their organizations and their own careers. Focuses on two overlapping contexts: complex deals, and financial services and products. Examines the structure of investment funds (including private equity, hedge funds, venture capital, and mutual funds); complex transactions, such as mergers and acquisitions, commercial finance, securitization, and corporate reorganizations in bankruptcy; financial services regulation; financial instruments and structured products; and civil and criminal accountability.
J. Akula

15.618 Law and Cutting-Edge Technologies
Prereq: None
G (Spring)
3-0-6
Designed for students with an interest in the law-sensitive issues raised by cutting-edge technologies, including those who are involved in research relating to a new technology or are planning to work in a setting where cutting-edge technology will be an important asset. Examines the legal framework of intellectual property (especially patents, but also trade secrets and copyright) and intellectual property licensing.
Considers the key legal issues that arise in the organization of a hi-tech start-up and in the commercialization of technology-based products in entrepreneurial and established companies. Also looks at issues specific to certain key sectors and technologies, such as software and life sciences.

J. Akula

15.628| Patents, Copyrights, and the Law of Intellectual Property (Same subject as 6.903) Prereq: None U (Spring) 3-0-6

Intensive introduction to the US law of intellectual property with major emphasis on patents, including the process of patent application and the remedies for patent infringement. Also focuses on copyrights and provides a brief look at trademarks and trade secrets. Presents comparisons of what can and cannot be protected, and what rights the owner does and does not obtain. Highlights issues relating to information technology, biogenetic materials, and business methods. Readings include judicial opinions and statutory material. No listeners.

J. A. Meldman, S. M. Bauer

15.647–15.649 Seminar in Law Prereq: Permission of instructor Acad Year 2014–2015: Not offered Acad Year 2015–2016: G (Fall, Spring) Units arranged H-LEVEL Grad Credit Can be repeated for credit

Group study of current topics related to law.

J. L. Akula

15.657 Technology, Globalization, and Sustainable Development (Same subject as 1.813J, 11.466J, ESD.137J) Prereq: Permission of instructor G (Fall) 3-0-9 H-LEVEL Grad Credit

See description under subject ESD.137J.

N. Ashford

INDUSTRIAL RELATIONS AND HUMAN RESOURCE MANAGEMENT

15.660 Strategic Human Resource Management Prereq: 15.311 G (Spring) 3-0-6 H-LEVEL Grad Credit

Design and execution of human resource management strategies. Two central themes: How to think systematically and strategically about aspects of managing the organization’s human assets, and what really needs to be done to implement these policies and to achieve competitive advantage. Adopts the perspective of a general manager and addresses human resource topics (including reward systems, performance management, high-performance human resource systems, training and development, recruitment, retention, equal employment opportunity laws, work-force diversity, and union-management relationships) from a strategic perspective.

E. J. Castilla

15.662 Managing Sustainable Businesses for People and Profits (Same subject as 11.383J, ESD.278J) Prereq: None G (Spring) 3-6-3

Examines opportunities and challenges involved in building and growing businesses that achieve high financial performance and returns to society. An anchor course for the social dimensions of sustainability and serves as an elective Sloan Sustainability Certificate program. Through readings, cases, simulations and class visits from industry leaders, students explore the underlying principles and business practices that help to secure that alignment between business health and societal wellbeing. Students participate in a team project with a firm that is addressing a sustainability challenge.

T. Kochan

15.665 Power and Negotiation Prereq: Permission of instructor G (Fall, Spring) 3-0-6 H-LEVEL Grad Credit Credit cannot also be received for 15.712

Provides understanding of the theory and processes of negotiation as practiced in a variety of settings. Designed for relevance to the broad spectrum of bargaining problems faced by the manager and professional. Allows students an opportunity to develop negotiation skills experientially and to understand negotiation in useful analytical frameworks. Emphasizes simulations, exercises, role-playing, and cases. Undergraduates may register for this subject provided they are ready to participate with the intensity expected for a grad H-level subject.

J. Curhan

15.668 People and Organizations Prereq: None U (Spring) 3-0-6

Examines the historical evolution and current human and organizational contexts in which scientists, engineers and other professionals work. Outlines major challenges facing the management profession. Uses interactive exercises, simulations and problems to develop critical skills in negotiations, teamwork, and leadership. Focuses on practical application of these skills in a professional context. Introduces concepts and tools to analyze work and leadership experiences in internships, school activities, and fieldwork. Preference to Management minors and other undergraduates not majoring in Management Science.

T. Kochan, J. Carroll, P. Osterman

15.676 Work, Employment, and Industrial Relations Theory Prereq: Permission of instructor G (Spring) 2-0-7 H-LEVEL Grad Credit

Historical evolution and assessment of different theories and disciplinary perspectives used in research on work, employment, and industrial relations. Introduces doctoral students to the field and explores where their research interests fit within the broader field. First part compares the normative assumptions, theories, and methodologies used by economists, historians, sociologists, psychologists, political scientists, and legal scholars from the latter nineteenth century to the present. Final portion explores strategies for advancing research on topics of current interest to participants.

T. Kochan, P. Osterman, E. Castilla, O. Sharone, M. Amengual

15.677 Urban Labor Markets and Employment Policy (Same subject as 11.427J) Prereq: Permission of instructor G (Spring) 3-0-9 H-LEVEL Grad Credit

Discusses the broader trends in the labor market, how urban labor markets function, public and private training policy, other labor market programs, the link between labor market policy and economic development, and the organization of work within firms.

P. Osterman

15.678 Political Economy I: Theories of the State and the Economy (Same subject as 14.781J, 17.100J) Prereq: Permission of instructor G (Fall) 3-0-9 H-LEVEL Grad Credit

See description under subject 17.100J.

M. Piore, S. Berger
15.691 Research Seminar in Work, Employment, and Industrial Relations
Prereq: Permission of instructor
Acad Year 2014–2015: Not offered
Acad Year 2015–2016: G (Fall, Spring)
Units arranged H-LEVEL Grad Credit
Can be repeated for credit
Discusses important areas for research in work, employment and industrial relations; frameworks for research, research techniques, and methodological problems. Centered mainly on staff research and the thesis research of advanced graduate students and invited guests. Consult T. A. Kochan

15.698 Seminar in Industrial Relations and Human Resource Management
Prereq: Permission of instructor
Acad Year 2014–2015: Not offered
Acad Year 2015–2016: G (Fall, Spring)
Units arranged H-LEVEL Grad Credit
Can be repeated for credit
Group study of current topics related to industrial relations and human resource management. Consult P. Osterman

EXECUTIVE MBA SUBJECTS

15.700 Leadership and Integrative Management
Prereq: Permission of instructor; or Coreq: 15.714, 15.722
G (Fall)
3-0-6 [P/D/F] H-LEVEL Grad Credit
Investigates the different perspectives a general manager must take, how to integrate those perspectives, and the role of leadership in setting and realizing goals. Students work intensively in teams and with multiple faculty, using a deep dive into the challenges faced by a major global firm operating in complex global markets. Restricted to Executive MBA students. Consult J. Hising DiFabio

15.703 Leading Complex Organizations
Prereq: Permission of instructor
G (IAP, Spring, Summer)
Units arranged H-LEVEL Grad Credit
Can be repeated for credit
Strengthens students’ skills in recognizing, developing, and taking advantage of opportunities created by organizational complexity. Focuses on key topics in corporate strategy, organizational design, organizational economics, and strategic human resource management, as well as themes such as integrative management, global leadership, and innovation and entrepreneurship strategy. Emphasizes teaching through integrative, multi-perspective cases, and reflection to prepare students for the next steps in their careers as general managers. Includes two projects where students create a plan for implementing a change initiative within their organization, and develop a career plan. Restricted to Executive MBA students. Consult J. Hising DiFabio

15.704 Innovation-Driven Entrepreneurial Advantage
Prereq: 15.714 or permission of instructor
G (Spring, Summer)
6-0-6 H-LEVEL Grad Credit
Exposes students to the content, context, and contacts that enable entrepreneurs to design and launch successful stand-alone ventures, ventures inside established corporations, and ventures in partnership with established corporations based on new innovations. Students examine the critical entrepreneurial and innovation challenges facing entrepreneurs inside new and established firms, and develop frameworks that allow them to identify, evaluate, iterate, and integrate their ideas effectively. Case-based discussions complemented by visits to key actors in MIT labs, as well as live case studies with successful entrepreneurs. Specially designed team projects provide practical experience in entrepreneurial strategy, innovation management, and the workings of the MIT entrepreneurial ecosystem. Restricted to Executive MBA students. Consult J. Hising DiFabio

15.705 Organizations Lab
Prereq: Permission of instructor or Coreq: 15.716
G (IAP, Spring, Summer)
3-0-9 H-LEVEL Grad Credit
Prepares for an organizational change project. Emphasis on applying tools of organizational, operational, and systems analysis in order to effect change. Includes a focus on the challenges and opportunities presented by issues of leadership and organizational behavior. Each student leads a change project in his or her own organization, focusing on fixing a broken or ineffective process. Examples of possible initiatives include a strategic reorientation, organizational restructuring, introduction of a new technology, a worker participation program, etc. Restricted to Executive MBA students. Consult J. Hising DiFabio

15.707 Leading a Global Context
Prereq: Permission of instructor
G (Fall, IAP, Spring, Summer)
6-0-6 H-LEVEL Grad Credit
Can be repeated for credit
Intensive module on international management, combining the key perspectives of macroeconomics, global business, and global strategy. Focuses on the policy and economic environment of firms, as well as on the development of a truly global market in products, services, and capital, and its effect on competition for businesses and industries. Presents key insights into national economic strategies for development, and into the evolving rules and institutions governing the new international economic order. Develops an appreciation of the international dimensions of strategy and organization in an increasingly complex world economy. Restricted to Executive MBA students. Consult J. Hising DiFabio

15.708 Global Organizations Lab
Prereq: Permission of instructor; Coreq: 15.707
G (Fall, IAP, Spring)
6-0-6 H-LEVEL Grad Credit
Helps students discover and develop new and effective ways of managing and working together across national borders; also helps accelerate development of the context awareness and integrative management skills needed to lead in a globalized world. Involves intensive team engagement with a firm where students integrate their understanding of the relevant global and national economic and institutional contexts, industry dynamics, the firm’s strategic position and capabilities, and its management organization and processes to provide the management sponsor with insight and effective recommendations. Includes a week-long site visit for research. Restricted to Executive MBA students. Consult J. Lehrich
15.712 Power and Negotiation
Prereq: Permission of instructor
G (IAP, Spring, Summer)
3-0-3 H-LEVEL Grad Credit
Credit cannot also be received for 15.665
Provides understanding of the theory and
processes of negotiation as practiced in a variety of
settings. Designed for relevance to the broad
spectrum of bargaining problems faced by the
manager and professional. Allows students an
opportunity to develop negotiation skills experi-
entially and to understand negotiation in useful
analytical frameworks. Emphasizes simulations,
exercises, role playing, and cases. Restricted to
Executive MBA students.
Consult J. Lehrich

15.714 Competitive Strategy
Prereq: Permission of instructor
G (IAP, Spring, Summer)
3-0-3 H-LEVEL Grad Credit
Credit cannot also be received for 15.902
Introduces a variety of modern strategy
frameworks and methodologies to develop
the skills needed to be a successful manager.
Cases and readings explore a range of strategic
problems, focusing particularly on the sources
of competitive advantage and the interaction
between industry structure and organizational
capabilities. Emphasizes the perspective of the
general manager in ensuring the firm’s success.
Encourages awareness of both the external
market and internal (organizational) forces that
shape firm performance. Restricted to Executive
MBA students.
Consult J. Hising DiFabio

15.716 Leading Organizations
Prereq: None
G (Summer)
3-0-6 [P/D/F]
Credit cannot also be received for 15.322
Promotes awareness of and ways to meet the
challenges managers face today (and tomorrow).
Acquaints students with some of the psychologi-
cal and sociological dynamics that regularly
operate in organizational settings—the less
visible “forces” that influence employee and
managerial behavior—and how these dynamics
shape the way managers respond to a changing
world. Restricted to Executive MBA students.
Consult J. Hising DiFabio

15.717 Organizational Processes
Prereq: Permission of instructor
G (Fall, Spring, Summer)
3-0-6 H-LEVEL Grad Credit
Designed to enhance students’ ability to take
effective action in complex organizational set-
tings by providing the analytic tools needed to
analyze, manage, and lead the organizations of
the future. Emphasizes the importance of the
organizational context in influencing which indi-
gidual styles and skills are effective. Employs a
wide variety of learning tools, from experiential
learning to the more conventional discussion of
written cases. Centers on three complementary
perspectives on organizations: the strategic
design, political, and cultural “lenses” on orga-
nizations. Restricted to Executive MBA students.
R. Fernandez, R. Reagans

15.720 Financial Accounting
Prereq: Permission of instructor
G (Spring)
3-0-6 H-LEVEL Grad Credit
Credit cannot also be received for 15.511
Examines the basic concepts of corporate finan-
cial accounting and reporting, and the role of
accounting information in investment decisions,
corporate and managerial performance assess-
ment, and the valuation of firms. Develops skills
for performing an economics-based analysis of
accounting information from the viewpoint of
the users of accounting information (especially
senior managers), rather than the preparer
(the accountant). Restricted to Executive MBA
students.
Consult J. Hising DiFabio

15.722 Applied Economics for Managers
Prereq: Permission of instructor
G (Fall)
3-0-6 H-LEVEL Grad Credit
Credit cannot also be received for 15.024
Develops facility with concepts, language, and
analytical tools of economics. Primary focus is
on microeconomics. Emphasizes integration of
tory, data, and judgment in the analysis of
porate decisions and public policy, and in the
essment of changing US and international
usiness environments. Restricted to Executive
MBA students.
Consult J. Hising DiFabio

15.724 Financial Management
Prereq: Permission of instructor
G (Fall, IAP, Spring, Summer)
3-0-6 H-LEVEL Grad Credit
Credit cannot also be received for 15.414
Introduction to corporate finance and capital
markets. Topics include project and company
valuation, real options, measuring risk and re-
turn, stock pricing and the performance of trad-
ing strategies, corporate financing policy, the
cost of capital, and risk management. Subject
gives a broad overview of both theory and
practice. Restricted to Executive MBA students.
N. Gregory, S. Myers

15.726 Pricing (New)
Prereq: None
G (IAP)
3-0-0
Credit cannot also be received for 15.818
Focuses on practical pricing tactics. Presents a
framework for the steps firms should take when
thinking about pricing a new product or impro-
viging the pricing performance of an old product.
Tools covered include monadic pricing surveys,
empirical price elasticity calculations, and con-
joint. Restricted to Executive MBA students.
Consult J. Hising DiFabio

15.727 The Analytics Edge (New)
Prereq: 15.730 or permission of instructor
G (Spring)
3-0-3 H-LEVEL Grad Credit
Introduces modern analytics methods (data
mining and optimization), starting with real-
world problems where analytics have made a
material difference. Modern data mining
methods include clustering, classification,
logistic regression, CART, random forest
methods, and association rules. Modern
imization methods include robust, adaptive
and dynamic finance, energy, security, internet,
and demand modeling. Uses R programming
language for data mining and ROME for robust
imization. Restricted to Executive MBA
students.
Consult J. Hising DiFabio

15.730 Data, Models, and Decisions
Prereq: Permission of instructor
G (IAP, Spring, Summer)
3-0-6 H-LEVEL Grad Credit
Credit cannot also be received for 15.060
Introduces students to fundamental tools in
using data to make informed management
decisions. Emphasizes the executive perspec-
tive: how to leverage best-practice quantitative
methods to manage and drive the business.
Exercises and cases complemented by perspec-
tives and applications in finance, operations
agement, healthcare, the Internet, and other
ctions and industries. Restricted to Executive
MBA students.
Consult J. Hising DiFabio
OPERATIONS MANAGEMENT

15.761 Introduction to Operations Management
Prereq: 15.060, 6.041, or permission of instructor
G (Fall, Spring, Summer)
3-0-5 H-LEVEL Grad Credit
Credit cannot also be received for 15.734, 15.766
Provides students with concepts, techniques and tools to design, analyze, and improve core operational capabilities, and apply them to a broad range of application domains and industries. Emphasizes the effect of uncertainty in decision-making, as well as the interplay between high-level financial objectives and operational capabilities. Covers topics in production control, risk pooling, quality management, process design, and revenue management. Underlines how these topics are integrated with the different functions of the firm (finance, marketing, R&D, etc.). Includes case studies and guest lectures. Simulation games demonstrate central concepts. Students taking graduate version complete additional assignments. Meets with 15.766 when offered concurrently. Summer section is primarily for Leaders for Global Operations students.
R. Levi, K. Zheng

15.762J Supply Chain Planning
(Same subject as 1.273J, ESD.267J)
Prereq: 1.260J, 15.760, or 15.761
G (Spring)
2-0-4 H-LEVEL Grad Credit
Focuses on effective supply chain strategies for companies that operate globally, with emphasis on how to plan and integrate supply chain components into a coordinated system. Students are exposed to concepts and models important in supply chain planning with emphasis on key tradeoffs and phenomena. Introduces and utilizes key tactics such as risk pooling and inventory placement, integrated planning and collaboration, and information sharing. Lectures, computer exercises, and case discussions introduce various models and methods for supply chain analysis and optimization. Recommended for Operations Management concentrators. First half-term subject.
Staff

15.763J Manufacturing System and Supply Chain Design
(Same subject as 1.274J, ESD.268J)
Prereq: 1.260J, 15.761, or 15.778
G (Spring)
2-0-4 H-LEVEL Grad Credit
Focuses on decision making for system design, as it arises in manufacturing systems and supply chains. Students exposed to frameworks and models for structuring the key issues and tradeoffs. Presents and discusses new opportunities, issues and concepts introduced by the internet and e-commerce. Introduces various models, methods and software tools for logistics network design, capacity planning and flexibility, make-buy, and integration with product development. Industry applications and cases illustrate concepts and challenges. Recommended for Operations Management concentrators. Second half-term subject.
S. C. Graves, D. Simchi-Levi

15.764J The Theory of Operations Management
(Same subject as 1.271J, ESD.274J)
Prereq: 15.081J or 6.251J, 6.436J; or permission of instructor
G (Spring)
3-0-9 H-LEVEL Grad Credit
Can be repeated for credit
Provides mathematical foundations underlying the theory of operations management. Covers application domains, including inventory management, supply chain management and logistics, behavioral operations, healthcare management, service industries, pricing and revenue management, and auctions. Studies a wide range of mathematical and analytical techniques, such as dynamic programming, stochastic orders, behavioral and experimental economics, algorithms and approximations, data-driven and learning models, and mechanism design. Also provides hands-on experience in how to apply the theoretical models to solve OM problems in concrete business settings. Specific topics vary from year to year.

15.765J Global Supply Chain Management
(Same subject as 1.265J, 2.965J, ESD.268J)
Prereq: 1.260J, 1.261J, 15.761, 15.778, or permission of instructor
G (Spring)
2-0-4 H-LEVEL Grad Credit
See description under subject 2.965J.
B. Arntzen
15.766 Introduction to Operations Management
Prereq: 6.041 or permission of instructor
U (Spring)
4-0-5
Credit cannot also be received for 15.734, 15.761
Provides students with concepts, techniques and tools to design, analyze, and improve core operational capabilities, and apply them to a broad range of application domains and industries. Emphasizes the effect of uncertainty in decision-making, as well as the interplay between high-level financial objectives and operational capabilities. Covers topics in production control, risk pooling, quality management, process design, and revenue management. Underscores how these topics are integrated with the different functions of the firm (finance, marketing, R&D, etc.). Includes case studies and guest lectures. Simulation games demonstrate central concepts. Students taking graduate version complete additional assignments. Meets with 15.761 when offered concurrently.
R. Levi, K. Zheng

15.767 Healthcare Lab: Introduction to Healthcare Delivery in the United States
Prereq: 15.060, 15.761; or permission of instructor
G (Fall)
3-0-6 H-LEVEL Grad Credit
Focuses on the current business challenges and opportunities of the US healthcare delivery industry, providing a broad perspective of their effects on various career paths, such as consulting, entrepreneurship, hospital management, pharmaceutical, biomedical and IT innovation. Provides students the opportunity to interact with outside speakers, including many top-level executives. Discussion based on practical examples from the ongoing healthcare-related work of Sloan faculty, particularly, projects with local hospitals. Students form teams and work directly with a US-based organization on an applied project, which includes an onsite visit during SIP week. Students can continue their onsite project under a different subject number during IAP with permission of the instructor and organization; consult instructor for information.
R. Levi, J. Wilkinson

15.768 Management of Services: Concepts, Design, and Delivery
Prereq: 15.761, 15.778, or permission of instructor
G (Spring)
3-0-6 H-LEVEL Grad Credit
Explores the use of operations tools and perspectives in the service sector, including both for-profit and not-for-profit organizations. Builds on conceptual frameworks and cases from a wide range of service operations, selected from health care, hospitality, internet services, supply chain, transportation, retailing, food service, entertainment, financial services, humanitarian services, government services, and others.
C. H. Fine, Z. Ton

15.769 Operations Strategy
Prereq: 15.761, 15.778, or permission of instructor
G (Fall, Spring)
3-0-6 H-LEVEL Grad Credit
Provides unified framework for analyzing strategic issues in manufacturing and service operations. Covers decisions in technology, facilities, vertical integration, human resources and other strategic areas. Explores means of competition, such as cost, quality, speed, innovativeness, and how operations companies address growth. Presents students with an approach to make operations decisions in the era of outsourcing and globalization.
C. H. Fine, D. B. Rosenfield, Z. Ton

15.770J Logistics Systems
(Same subject as 1.260J, ESD.260J)
Prereq: Permission of instructor
G (Fall)
3-0-9 H-LEVEL Grad Credit
Provides an introduction to supply chain management from both analytical and practical perspectives. Taking a unified approach, students develop a framework for making intelligent decisions within the supply chain. Covers key logistics functions, such as demand planning, procurement, inventory theory and control, transportation planning and execution, reverse logistics, and flexible contracting. Explores concepts such as postponement, portfolio management, and dual sourcing. Emphasizes skills necessary to recognize and manage risk, analyze various tradeoffs, and model logistics systems.
Y. Sheffi, C. Caplice

15.771J Case Studies in Logistics and Supply Chain Management
(Same subject as 1.261J, ESD.261J)
Prereq: Permission of instructor
G (Spring)
3-0-6 H-LEVEL Grad Credit
A combination of lectures and cases covering the strategic, management, and operating issues in contemporary logistics and integrated supply chain management. Includes: logistics strategy; supply chain restructuring and change management; and distribution, customer service, and inventory policy.
J. Byrnes

15.772J D-Lab: Supply Chains
(Same subject as EC.733J)
Prereq: None
U (Fall)
2-2-5
Introduces concepts of supply chain design and operations with a focus on supply chains for products destined to improve quality of life in developing countries. Topics include demand estimation, facility location and operations planning, inventory management, and supply chain coordination and performance. Also covers issues specific to emerging markets, such as sustainable supply chains, how to couple product design with supply chain design and operation, and how to account for the value-adding role of a supply chain. Students conduct projects on supply chain design or improvement.
S. C. Graves

15.778 Introduction to Operations Management
Prereq: None
G (Summer)
3-0-6
Integrated approach to the analysis, design and management of supply networks for products and services. Provides a framework for analysis, design and operation of supply chains (SCs) that relies on fundamental concepts, such as the management of inventory, and operations and logistics planning. Discusses the value of timely information and of the need for collaboration and coordination between SC players. Also presents conceptual frameworks that focus on the emergence of a wide range of enabling services that are critical to the survival and growth of this class of system. Includes study and discussion of concepts, examples, and case studies from a wide range of industries. Guest speakers present personal experiences on various aspects of the service industry and supply chains. Restricted to MIT Sloan Fellows in Innovation and Global Leadership.
Consult C. H. Fine

15.783J Product Design and Development
(Same subject as 2.739J, ESD.32J)
Prereq: 2.009, 15.761, 15.778, 15.810, or permission of instructor
G (Spring)
3-3-6 H-LEVEL Grad Credit
Credit cannot also be received for 15.735, ESD.40
Covers modern tools and methods for product design and development. The cornerstone is a
project in which teams of management, engineering and industrial design students conceive, design and prototype a physical product and/or service. Class sessions employ cases to reinforce the key ideas. Topics include design thinking, product planning, identifying customer needs, concept generation, product architecture, industrial design, concept design, robust design, and green design practice. Enrollment limited; preference to students who register via Sloan Course Bidding.
S. Eppinger, W. P. Seering

15.784 Operations Laboratory
Prereq: None. Coreq: 15.761 G (Spring)
2-3-4 H-LEVEL Grad Credit
Provides an interactive learning experience in implementing operations improvement. Teams of 3-5 students act as consultants on operations engagements in small- to medium-sized Boston area organizations. Class time focuses on project management, implementation issues for and examples from company settings (particularly small ones), and team report-outs and discussions. Organizations include small manufacturing companies as well as service organizations, such as hospitals and non-profits, providing a wide range of real operational problems in various environments.
D. B. Rosenfield, Z. Ton

15.792J Global Operations Leadership Seminar
(Same subject as 2.890, 10.792J, 16.985J)
Prereq: None
G (Fall, Spring)
Units arranged [P/D/F]
Can be repeated for credit
Integrative forum in which worldwide leaders in business, finance, government, sports, and education share their experiences and insights with students aspiring to run global operations. Students play a large role in managing the seminar. Preference to LGO students.
D. B. Rosenfield

15.794 Research Project in Operations
Prereq: Permission of instructor
G (Fall, Spring, Summer)
Units arranged [P/D/F] H-LEVEL Grad Credit
Can be repeated for credit
Designed for Leaders for Global Operations (LGO) students in conjunction with on-site projects at LGO partner companies. Student teams work on faculty-supervised thesis research projects that deal with a specific aspect of operations. Students required to summarize their work in the context of understanding organization, leadership, teamwork, and task management in conjunction with 15.317.
D. B. Rosenfield

15.795 Seminar in Operations Management
Prereq: 15.760 or 15.761 G (Fall)
3-0-6 H-LEVEL Grad Credit
Can be repeated for credit
Topics vary from year to year. Typical examples from past years: manufacturing strategy, technology supply chains.
C. H. Fine

15.799 Workshop in Operations Management
Prereq: None
G (Fall, Spring)
Units arranged
Can be repeated for credit
Presentations by faculty, doctoral students, and guest speakers of ongoing research relating to current issues in operations management, including reports of research projects (proposed or in progress) and informal discussions of recent literature dealing with subjects of special interest to participants. Primarily for doctoral students.
Staff

MARKETING

15.809 Marketing Management
Prereq: None
G (Summer)
3-0-6
Credit cannot also be received for 15.732, 15.809, 15.810
Marketing is a rigorous, disciplined science that applies a reasoned framework to the selection of target markets and the optimization of marketing decisions. The subject has two parts: a tactical portion and a strategic portion. The strategic portion focuses on identifying target markets. The tactical portion reviews how firms optimize profits in their chosen markets. Tactical topics include pricing, promotion, channel and product issues. Restricted to MIT Sloan Fellows in Innovation and Global Leadership.
D. Simester

15.810 Marketing Management
Prereq: None
G (Fall, Spring)
3-0-6
Credit cannot also be received for 15.732, 15.809, 15.812
Develops skills in marketing analysis and planning, and introduces key marketing ideas and phenomena, such as how to deliver benefits to customers. Presents a framework for marketing analysis and enhances problem solving and decision-making abilities in these areas. Material relevant to understanding, managing, and integrating marketing concepts in managerial situations, from entrepreneurial ventures to large multinational firms and to consulting.
J. R. Hauser

15.812 Marketing Management
Prereq: None
U (Spring)
3-0-6
Credit cannot also be received for 15.732, 15.809, 15.810
Develops skills in marketing analysis and planning, and introduces key ideas and phenomena, such as how to deliver benefits to customers. Presents a framework for analysis and enhances problem solving and decision-making abilities in these areas. Material relevant to understanding, managing, and integrating marketing concepts in managerial situations, from entrepreneurial ventures to large multinational firms and to consulting. Primarily for undergraduate and non-MBA graduate students.
J. Zhang

15.818 Pricing
Prereq: None
G (Fall)
3-0-6
Credit cannot also be received for 15.726
Framework for understanding pricing strategies and analytics. Topics include economic value analysis, elasticities, customization, complementary products, pricing in platform markets, and anticipating competitive responses.
C. Tucker

15.821 Listening to the Customer
Prereq: None
G (Fall; first half of term)
3-0-3
Introduction to soft consumer research methods, useful for getting quick customer input into decisions on product design and development, strategic positioning, advertising, and branding. Covers interview techniques, observational
15.822 Strategic Market Measurement
Prereq: None
G (Fall; second half of term) 3-0-3

Project subject teaches students how to create, carry out, interpret, and analyze a market research questionnaire. Emphasis on discovering market structure and segmentation, but students can pursue other project applications. Includes a user-oriented treatment of multivariate analysis (factor analysis, multidimensional scaling, conjoint and cluster analysis).

D. Prelec

15.828 Design and Marketing New Products
Prereq: 15.809, 15.810 or 15.812
Acad Year 2014–2015: Not offered
Acad Year 2015–2016: G (Spring; first half of term) 3-1-5 H-LEVEL Grad Credit

Practical introduction to the process of designing and marketing new products. Covers the major phases of product development: opportunity identification (customer input, generating ideas, market definition), product design and positioning, pre-market testing and forecasting, launch marketing, and managing the life cycle.

Staff

15.830 Enterprise Management Lab
Prereq: None. Coreq: 15.810, 15.761, or 15.900 G (Fall; IAP) 3-0-3

Lays the foundation for the Enterprise Management (EM Lab) Track by developing students’ ability to apply integrated management perspectives and practices in their roles within large organizations. Lectures, faculty mentors and cross-functional teams equip students with tools and knowledge to implement this track vision through classroom and project-based activities. Small teams of students deliver quality deliverables working on live integrative projects focused on marketing, operations, and/or Strategy sourced from large organizations, both for-profit and not-for-profit. Management guest speakers from Marketing, Operations and Strategy discuss their interrelated activities. The overall goal is to promote an integrated mindset towards viewing and addressing business issues. Students must register for both the fall term and IAP. Restricted to MBA students in EM Track.

S. Chatterjee

15.833 Business-to-Business Marketing
Prereq: None
G (Fall; second half of term) 3-0-3

Applies marketing concepts, analyses and tools used in business-to-business (B2B) marketing which accounts for more than half of the economic activity in the US. Develops an understanding of customer value management as a strategy for delivering superior value to targeted business segments while maintaining equitable returns. Using an analytical framework, students assess components of customer value and translate them into actionable marketing strategies and programs. Focuses on brand building, web and technology facilitation of the supply chain, and customer relationship management. Underscores sales force management within the context of go-to-market strategy. Discusses ethical issues and various B2B contexts such as products and services, for-profits and non-profits, domestic and global markets. Emphasis on applications in technology and healthcare domains. Includes case studies, applied exercises, and readings.

S. Chatterjee

15.834 Marketing Strategy
Prereq: None
G (Spring; first half of term) 3-0-6

Uses case studies to introduce economic tools to look systematically at marketing strategy. Topics include how to identify and leverage customer-based competitive advantages and how to use them to develop new ones.

B. Wernerfelt

15.835 Entrepreneurial Marketing
Prereq: None
G (Spring; second half of term) 3-0-3

Introduces economic tools to look systematically at entrepreneurial marketing. Topics include how to design products and marketing plans to maximize value for the customer-firm-supplier triad, how to evaluate innovative business models, and when to switch from investing in to monetizing of the customer base. Includes cases, guest speakers, and a project.

B. Wernerfelt

15.838 Research Seminar in Marketing
Prereq: 15.810
G (Fall, Spring) 3-0-6 H-LEVEL Grad Credit
Can be repeated for credit

Seminar on current marketing literature and current research interests of faculty and students. Topics such as marketing models, consumer behavior, competitive strategy, marketing experimentation, and game theory. Restricted to doctoral students.

Consult D. Prelec

15.839 Workshop in Marketing
Prereq: Permission of instructor
G (Fall, Spring)
Units arranged [P/D/F]
Can be repeated for credit

Presentations by faculty, doctoral students, and guest speakers of ongoing research relating to current issues in marketing. Topics: reports of research projects (proposed or in progress) and informal discussions of recent literature dealing with subjects of special interest to participants. Restricted to doctoral students.

Staff

15.840–15.843 Seminar in Marketing
Prereq: 15.809, 15.810, or 15.812
Acad Year 2014–2015: Not offered
Acad Year 2015–2016: G (Fall, Spring)
Units arranged H-LEVEL Grad Credit
Can be repeated for credit

Group study of current topics related to marketing.

Staff

15.846 Branding
Prereq: 15.809, 15.810, or 15.812
G (Spring; second half of term) 3-0-3 H-LEVEL Grad Credit

Provides a foundation for building, managing, and defending brands at various stages in the brand life cycle. Introduces the fundamentals of brand architecture and management relevant for B2C and B2B Marketing. Examples from a variety of industries cover topics that include brand co-creation, diffusion, imitation, and authenticity. Explores theory and practice using cases and academic research. Also looks at the development of leadership branding.

R. Gosline
15.847 Consumer Behavior  
**Prereq:** None  
**Acad Year 2014–2015:** Not offered  
**Acad Year 2015–2016:** G (Spring)  
3-0-6  
Examines models of consumer behavior and methods for its analysis and prediction. Focuses on theories developed in marketing, psychology, and other behavioral sciences, and their role in understanding consumer preferences and decision making. Reviews theories in the context of a variety of industry applications. Students apply theories to their own market research projects.  
*J. Ackerman*

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**SYSTEM DYNAMICS**

15.871 Introduction to System Dynamics  
**Prereq:** Permission of instructor  
G (Fall, Spring; first half of term)  
3-0-3 H-LEVEL Grad Credit  
Credit cannot also be received for 15.736  
Introduction to systems thinking and system dynamics modeling applied to strategy, organizational change, and policy design. Students use simulation models, management flight simulators, and case studies to develop conceptual and modeling skills for the design and management of high-performance organizations in a dynamic world. Case studies of successful applications of system dynamics in growth strategy, management of technology, operations, supply chains, product development, and others. Principles for effective use of modeling in the real world.  
*Consult J. D. Sterman*

15.872 System Dynamics II  
**Prereq:** 15.871  
G (Fall, Spring; second half of term)  
3-0-3 H-LEVEL Grad Credit  
Continuation of 15.871, emphasizing tools and methods needed to apply systems thinking and simulation modeling successfully in complex real-world settings. Uses simulation models, management flight simulators, and case studies to deepen the conceptual and modeling skills introduced in 15.871. Through models and case studies of successful applications students learn how to use qualitative and quantitative data to formulate and test models, and how to work effectively with senior executives to implement change successfully. Prerequisite for further work in the field.  
*J. D. Sterman, H. Rahmandad, D. Keith*

15.875 Applications of System Dynamics  
**Prereq:** 15.872  
**Acad Year 2014–2015:** Not offered  
**Acad Year 2015–2016:** G (Spring)  
3-0-6 H-LEVEL Grad Credit  
Can be repeated for credit  
Explores how system dynamics can help organizations achieve important goals. Students pair with clients to tackle a pressing issue framed by the client and its partners. In interactive classroom sessions, and via client engagement, students learn modeling and consulting skills they need to be effective. Focuses on gaining practical insight from system dynamics and its application across a wide range of organizations and challenges.  
*J. D. Sterman*

15.877 Professional Seminar in Sustainability  
**Prereq:** None  
**Acad Year 2014–2015:** Not offered  
**Acad Year 2015–2016:** G (Fall)  
2-0-1 [P/D/F]  
Focuses on the challenges in bringing about fundamental changes to achieve sustainability in areas of human activity, such as products and services, buildings and communities, and organizations and institutions. Considers how individuals and networks develop and function as agents of change and examines the question of what it means to be an effective agent of change through a series of dialogs with a variety of professionals in business and industry. Students analyze and evaluate the implications of ongoing work in the field, with a focus on how to address systemic change in their own careers.  
*J. Jay*

15.878 Capstone Seminar in Sustainability  
**Prereq:** 15.913  
G (Spring; second half of term)  
3-0-3 H-LEVEL Grad Credit  
Provides an opportunity for students to synthesize their coursework and experiences in sustainability. Involves deep intellectual exploration of fundamental debates in sustainability through classic and current readings that are essential for working in the field. Students link ideas to practice through an analysis of the industry they plan to enter after graduation.  
*Staff*

15.879 Research Seminar in System Dynamics  
**Prereq:** 15.872 and permission of instructor  
**Acad Year 2014–2015:** Not offered  
**Acad Year 2015–2016:** G (Spring)  
3-0-9 H-LEVEL Grad Credit  
Can be repeated for credit  
Doctoral level seminar in system dynamics modeling, with a focus on social, economic and technical systems. Covers classic works in dynamic modeling from various disciplines and current research problems and papers. Participants critique the theories and models, often including replication, testing, and improvement of various models, and lead class discussion. Topics vary from year to year.  
*Consult J. D. Sterman, N. P. Repenning*

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**STRATEGIC MANAGEMENT**

15.900 Competitive Strategy  
**Prereq:** None  
G (Fall, Spring)  
3-0-6  
Explores a wide range of strategic problems, focusing particularly on the sources of competitive advantage and the interaction between industry structure and organizational capabilities. Introduces a wide variety of modern strategy frameworks and methodologies. Builds upon and integrates material from core topics, such as economics and organizational processes.  
*D. Sull*

15.902 Competitive Strategy  
**Prereq:** Permission of instructor  
G (Fall; second half of term)  
2-0-4 H-LEVEL Grad Credit  
Credit cannot also be received for 15.714  
Focuses on developing skills and applying frameworks for the conduct of competitive and corporate strategy. Develops tools from earlier core courses, especially those from Strategic Marketing and Organizational Processes, and Economics. Emphasis is placed on the role of strategic commitments, social networks, strategic coherence, and adapting to environmental and technological change. Restricted to MIT Sloan Fellows in Innovation and Global Leadership.  
*E. Zuckerman*
MANAGEMENT

15.903 Managing the Modern Organization: Organizational Economics and Corporate Strategy
Prereq: 15.010 or 15.311
Acad Year 2014–2015: Not offered
Acad Year 2015–2016: G (Spring; first half of term)
3-0-3 H-LEVEL Grad Credit

Focuses on how managers build and manage complex organizations to achieve strategic goals. Develops theoretical frameworks that build on 15.010 and 15.311. Applies these frameworks to corporate strategy (i.e., the design and management of the multi-business firm) and extended enterprises (i.e., the design and management of multi-firm structures such as supply chains, alliances, joint ventures, and networks).

R. Gibbons

15.904 Advanced Strategic Management
Prereq: 15.900, or permission of instructor
G (Fall, Spring; second half of term)
3-0-3 H-LEVEL Grad Credit

Builds on 15.900 and 15.902 to explore key concepts that have shaped the field of strategic management and strategy consulting over the past several decades. Uses lectures, readings, case studies, and videos to review the evolution of strategy teaching, research, and practice; the role of randomness in strategic outcomes; the difference between strategic thinking versus planning; and enduring principles related to competitive advantage. Key themes include the role of platform strategies and services, as well as capabilities, pull mechanisms, economies of scope, and flexibility, with examples from a variety of industries. Develops an understanding of what has made some firms successful in the past as well as what managers can do to compete in an uncertain future.

M. Cusumano

15.905 Technology Strategy for SDM
Prereq: None
G (Spring)
3-0-9

Provides a series of strategic frameworks for managing high-technology businesses. Emphasis on the development and application of conceptual models which clarify the interactions between competition, patterns of technological and market change, and the structure and development of internal firm capabilities. SDM students only, except with instructor permission.

J. Utterback

15.910 Technology Strategy
Prereq: None
G (Spring; first half of term)
3-0-3

Establishes a solid foundation for students interested in formulating and executing a strategy for a technology-intensive business. Clarifies the interactions among competition, patterns of technological and market change, and the development of internal firm capabilities. Topics include appropriating the returns from innovation, the role of intellectual property, cooperative and open innovation, organization of R&D activities inside the firm, and multi-sided platform strategy. Key conceptual frameworks are linked to applications in a variety of industry and case settings.

P. Azoulay

15.911 Entrepreneurial Strategy
Prereq: None
G (Spring; second half of term)
6-0-3

Provides a strategic management framework for the management of entrepreneurial firms. Develops a set of powerful conceptual frameworks that allow entrepreneurs to evaluate and implement key strategic choices: the selection of novel technological and market opportunities, the organization and funding of early-stage ventures, and the development of a commercialization path. Emphasizes the dynamic nature of entrepreneurship; highlights the role of strategy in the management of uncertainty, and innovation in periods of industry disruption. Briefly considers the role of entrepreneurship and entrepreneurs in economic growth.

S. Stern

15.912 Strategic Management of Innovation and Entrepreneurship
Prereq: 15.910, 15.911, or permission of instructor
G (Spring; second half of term)
3-0-3 H-LEVEL Grad Credit

Provides a series of strategic frameworks for managing high-technology businesses with a particular focus on innovation and entrepreneurship, especially as it builds upon patterns of technological and market change, prior research on product development and new ventures, and the structure and development of organizational capabilities. Includes case analyses and simulations, as well as independent readings drawn from research in technological innovation, entrepreneurial management, and organizational theory.

J. Utterback

15.913 Strategies for Sustainable Business
Prereq: None
G (Spring; first half of term)
3-0-3

Develops a pragmatic, action-oriented approach to sustainability: the alignment between healthy businesses, healthy environments, healthy societies, and an economy that meets human needs. In-class simulations and role-playing provide a robust foundation for understanding sustainability challenges. Cases analyze innovative strategies for sustainable businesses and organizations. Class discussions explore how sustainability is changing existing business models and market structures, how to develop sustainable management practices, and how firms can implement those practices successfully.

J. Jay, J. D. Sterman

15.914 Competitive Dynamics and Strategy: Winning in Technology Markets
Prereq: 15.872; 15.369, 15.567, 15.900, or 15.902
G (Spring)
2-0-7 H-LEVEL Grad Credit

Focuses on competitive strategy in technology-driven markets. Students acquire a portfolio of models of the signature dynamics in these markets and use the models in projects with participating companies to analyze technology markets, formulate competitive strategies, and illuminate the challenges of execution. Addresses issues critical for both established incumbents and new market entrants. Restricted to graduate students.

H. B. Weil

15.915 Laboratory for Sustainable Business
Prereq: 15.913
G (Spring)
4-0-2 H-LEVEL Grad Credit

Provides students with the opportunity to apply the concepts, theories, and tools of sustainability by working with a host organization on a real management project during the term. Classroom lectures and simulations complement project work to give greater depth in techniques for managing sustainability. Topics include start-up dynamics, certification programs, evaluating the environmental impact of products and services, and leveraging consumers to advance sustainability.

J. Jay, J. D. Sterman

Staff
15.928 The Sociology of Strategy (New)  
Prereq: 15.342  
Acad Year 2014–2015: Not offered  
Acad Year 2015–2016: G (Spring)  
3-0-9 H-LEVEL Grad Credit  

Doctoral seminar in theory building for social scientists interested in economic sociology, organization theory, strategic management, and related fields. Builds skills for developing social scientific theory. Focuses on assessing and developing the relevance of sociological research for key questions in strategy research: what explains the relative performance of firms and the variety of their strategies for achieving performance. Students also develop skills in evaluating academic research in this area. Restricted to doctoral students.  
E. Zuckerman

15.929 Identity and Action (New)  
Prereq: 15.342  
G (Spring)  
3-0-9 H-LEVEL Grad Credit  

Doctoral seminar in theory building for social scientists. Primary goal is to build skills for developing social scientific theory. Secondary goals are to review and integrate a broad array of ideas concerning the foundations of identity and its relation to action, and to suggest how such issues relate to a broader set of questions in the social sciences. Students learn that any account of action is based on ascribing desires, beliefs, and opportunities to specific actors, but such actors cannot be easily explained except as a result of action by prior actors. The focus of this course is around developing this paradox and providing a foundation for resolving it. Restricted to doctoral students.  
E. Zuckerman

15.933 Strategic Opportunities in Energy  
Prereq: 15.900 or permission of instructor  
G (Fall; first half of term)  
4-0-2 H-LEVEL Grad Credit  

Introduces the energy system in terms of sources and uses, market characteristics, and key metrics. Provides frameworks for understanding the structure and dynamics of the sector and the drivers of the energy future. Opportunities resulting from demand growth, supply challenges, environmental constraints, security of supply, technology breakthroughs, and regulation are analyzed from the perspectives of both established players and entrepreneurs. Student teams engage in projects that evaluate a segment of the energy landscape and develop a strategic prospectus for a new business opportunity.  
H. B. Weil, A. J. M. Meggs

15.941J Leadership in Real Estate  
(Same subject as 11.430J)  
Prereq: None  
G (Fall; first half of term)  
3-0-3  

Designed to help students deepen their understanding of leadership and increase self-awareness. They examine authentic leadership styles and create goals and a learning plan to develop their capabilities. They also participate in activities to strengthen their “leadership presence”—the ability to authentically connect with people’s hearts and minds. Students converse with leaders to learn from their insights, experiences, and advice. Limited to 15.  
G. Schuck

15.949 Seminar in Strategy  
Prereq: Permission of instructor  
G (Fall, Spring)  
Units arranged H-LEVEL Grad Credit  
Can be repeated for credit  

Opportunity for group study by graduate students on current topics related to strategy.  
Consult E. Zuckerman

SPECIAL SUBJECTS

15.501, 15.502 Special Seminar in Management  
Prereq: Permission of instructor  
G (Fall, IAP, Spring, Summer)  
Units arranged H-LEVEL Grad Credit  
Can be repeated for credit

15.503 Special Seminar in Management  
Prereq: Permission of instructor  
G (IAP, Spring, Summer)  
Units arranged H-LEVEL Grad Credit  
Can be repeated for credit

15.504 Special Seminar in Management  
Prereq: Permission of instructor  
Acad Year 2014–2015: Not offered  
Acad Year 2015–2016: G (Fall, IAP, Spring, Summer)  
Units arranged H-LEVEL Grad Credit  
Can be repeated for credit

15.505–15.508 Special Seminar in Management  
Prereq: Permission of instructor  
Acad Year 2014–2015: Not offered  
Acad Year 2015–2016: G (Fall, IAP, Spring, Summer)  
Units arranged H-LEVEL Grad Credit  
Can be repeated for credit

15.509–15.512 Special Seminar in Management  
Prereq: Permission of instructor  
G (Fall, IAP, Spring, Summer; second half of term)  
Units arranged H-LEVEL Grad Credit  
Can be repeated for credit

15.513, 15.514 Special Seminar in Management  
Prereq: Permission of instructor  
Acad Year 2014–2015: Not offered  
Acad Year 2015–2016: G (Fall, IAP, Spring, Summer, first half of term)  
Units arranged H-LEVEL Grad Credit  
Can be repeated for credit

15.515–15.517 Special Seminar in Management  
Prereq: Permission of instructor  
G (Fall, IAP, Spring, Summer)  
Units arranged H-LEVEL Grad Credit  
Can be repeated for credit

15.518, 15.519 Special Seminar in Management  
Prereq: Permission of instructor  
Acad Year 2014–2015: Not offered  
Acad Year 2015–2016: G (Fall, IAP, Spring, Summer)  
Units arranged H-LEVEL Grad Credit  
Can be repeated for credit

15.520–15.526 Special Seminar in Management  
Prereq: Permission of instructor  
G (IAP, Spring)  
Units arranged  
Can be repeated for credit

Group study of current topics related to management not otherwise included in curriculum. Coursework may continue into the following term.  
Consult Sloan Educational Services
15.S30–15.S33 Special Distance Learning Seminar in Management
Prereq: None
Acad Year 2014–2015: Not offered
Acad Year 2015–2016: G (Fall, IAP, Spring, Summer)
Units arranged
Can be repeated for credit
Group study through distance learning on current topics related to management.
Consult Sloan Educational Services

15.S40, 15.S41 Special Seminar in Management
Prereq: None
Acad Year 2014–2015: Not offered
Acad Year 2015–2016: U (Fall, Spring)
Units arranged [P/D/F]
Can be repeated for credit

Prereq: None
Acad Year 2014–2015: Not offered
Acad Year 2015–2016: U (Fall, IAP, Spring)
Units arranged
Can be repeated for credit

15.S50–15.S54 Special Seminar in Management
Prereq: Permission of instructor
Acad Year 2014–2015: Not offered
Acad Year 2015–2016: G (IAP)
Units arranged [P/D/F] H-LEVEL Grad Credit
Can be repeated for credit

Prereq: Permission of instructor
Acad Year 2014–2015: Not offered
Acad Year 2015–2016: G (IAP)
Units arranged [P/D/F] H-LEVEL Grad Credit
Can be repeated for credit

15.S60–15.S65 Special Seminar in Management
Prereq: Permission of instructor
Acad Year 2014–2015: Not offered
Acad Year 2015–2016: G (Fall, IAP, Spring, Summer)
Units arranged [P/D/F] H-LEVEL Grad Credit
Can be repeated for credit

15.S70–15.S75 Special Seminar in Management
Prereq: Permission of instructor
Acad Year 2014–2015: Not offered
Acad Year 2015–2016: G (Fall, IAP, Spring, Summer)
Units arranged H-LEVEL Grad Credit
Can be repeated for credit

15.UR Undergraduate Research in Management
Prereq: None
U (Fall, IAP, Spring, Summer)
Units arranged [P/D/F]
Can be repeated for credit

15.URG Undergraduate Studies in Management
Prereq: None
U (Fall, IAP, Spring, Summer)
Units arranged
Can be repeated for credit
Participation in the work of a research group which includes such activities as independent study of the literature, direct involvement in the group’s research (commensurate with the student’s skills and preparation), or project work under an individual faculty member possibly extending over more than one term. Admission by arrangement with individual faculty member. Requires written project report.
J. S. Carroll

15.950 Independent Study in Management
Prereq: None
U (Fall, IAP, Spring, Summer)
Units arranged [P/D/F]
Can be repeated for credit
Advanced work, special investigation or application of a management topic, on an individual basis, under faculty supervision. May include readings, conferences, laboratory and fieldwork, and reports. Projects require prior approval, as well as a written proposal and a final report.
M. Hanlon

15.952 Curricular Practical Training
Prereq: None
U (Fall, IAP, Spring)
0-1-0 [P/D/F]
Can be repeated for credit
For Course 15 undergraduate students participating in management curriculum-related off-campus work experiences. Students must have an employment offer from a company or organization and must find a Sloan faculty supervisor before enrolling. Consult Sloan Undergraduate Education Office
M. Hanlon
15.960 Independent Study in Management
Prereq: Permission of instructor
G (Fall, IAP, Spring, Summer)
Units arranged [P/D/F] H-LEVEL Grad Credit
Can be repeated for credit

15.961 Independent Study in Management
Prereq: Permission of instructor
G (Fall, IAP, Spring, Summer)
Units arranged H-LEVEL Grad Credit
Can be repeated for credit

Advanced work, special investigation or application of a management topic, on an individual basis, under faculty supervision. May include readings, conferences, laboratory and fieldwork, and reports. Projects require prior approval, as well as a written proposal and a final report. Consult Sloan Educational Services

15.962 Pre-Thesis Research
Prereq: Permission of instructor
G (Fall, IAP, Spring, Summer)
Units arranged H-LEVEL Grad Credit
Can be repeated for credit

Pre-thesis research conducted under faculty supervision; advance approval of project proposal required. Restricted to PhD students. Consult H. Ross

15.999 Curricular Practical Training (CPT)
Prereq: None
G (Fall, IAP, Spring)
Units arranged [P/D/F]
Can be repeated for credit

Students participate in off-campus work or internship experience and apply topics of management and/or culture to their experience. Requirements include mandatory attendance at one workshop and a written deliverable. Students must have a formal employment offer prior to enrolling. Restricted to MIT Sloan students who have been in legal F1 status for nine consecutive months and who wish to work in the United States in an area related to their field of study. Additional restrictions may apply. Consult Sloan Educational Services

15.THG Graduate Thesis
Prereq: Permission of instructor
G (Fall, IAP, Spring, Summer)
Units arranged H-LEVEL Grad Credit
Can be repeated for credit

Research and writing of thesis; to be arranged by the student with supervising committee. Consult Sloan Educational Services

## Bachelor of Science in Management Science/Course 15

### General Institute Requirements (GiRs)

<table>
<thead>
<tr>
<th>Subjects</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Humanities, Arts, and Social Sciences Requirement</td>
<td>6</td>
</tr>
<tr>
<td>Science Requirement</td>
<td></td>
</tr>
<tr>
<td>Restricted Electives in Science and Technology (REST) Requirement</td>
<td>8</td>
</tr>
<tr>
<td>Laboratory Requirement</td>
<td>2</td>
</tr>
<tr>
<td>Total GiRs Subjects Required for SB Degree</td>
<td>17</td>
</tr>
</tbody>
</table>

### Communication Requirement

The program includes a Communication Requirement of 4 subjects: 2 subjects designated as Communication Intensive in Humanities, Arts, and Social Sciences (CI-H); and 2 subjects designated as Communication Intensive in the Major (CI-M).

### PLUS Departmental Program

Subject names below are followed by credit units, and by prerequisites, if any (corequisites in italics).

<table>
<thead>
<tr>
<th>Required Subjects</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.00 Introduction to Computers and Engineering Problem Solving</td>
<td>12</td>
</tr>
<tr>
<td>6.041 Probabilistic Systems Analysis</td>
<td>12</td>
</tr>
<tr>
<td>14.01 Principles of Microeconomics</td>
<td>12</td>
</tr>
<tr>
<td>14.02 Principles of Macroeconomics</td>
<td>12</td>
</tr>
<tr>
<td>15.053 Optimization Methods in Management Science</td>
<td>12</td>
</tr>
<tr>
<td>15.075 Statistical Thinking and Data Analysis</td>
<td>12</td>
</tr>
<tr>
<td>15.279 Management Communication for Undergraduates</td>
<td>12</td>
</tr>
<tr>
<td>15.301 Managerial Psychology Laboratory</td>
<td>15</td>
</tr>
<tr>
<td>18.06 Linear Algebra</td>
<td>12</td>
</tr>
</tbody>
</table>

### Restricted Electives

<table>
<thead>
<tr>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>27–45</td>
</tr>
</tbody>
</table>

### Concentration Subjects

Two to three additional subjects as specified in one of the following four concentrations:

- Finance
- Information Technologies
- Marketing Science
- Business Analytics
- Operations Research

### Departmental Program Units That Also Satisfy the GiRs

<table>
<thead>
<tr>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>60</td>
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</table>

### Unrestricted Electives

<table>
<thead>
<tr>
<th>Units</th>
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<tbody>
<tr>
<td>72–90</td>
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</tbody>
</table>

### Total Units Beyond the GiRs Required for SB Degree

<table>
<thead>
<tr>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>180</td>
</tr>
</tbody>
</table>

No subject can be counted both as part of the 17-subject GiRs and as part of the 180 units required beyond the GiRs. Every subject in the student’s departmental program will count toward one or the other, but not both.

### Notes

* Alternate prerequisites are listed in the subject description.

For an explanation of credit units, or hours, please refer to the online help of the MIT Subject Listing & Schedule, http://student.mit.edu/catalog/index.cgi.