

MANAGEMENT (COURSE 15)

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.

Consult D. Gormley

15.003 Analytics Tools (New)

Prereq: None

G (Fall, IAP, Spring, Summer)

2-0-1 units

Units assigned to Master of Business Analytics students upon completion of the Analytics Tools requirement. Restricted to Master of Business Analytics students.

Consult D. Gormley

15.010 Economic Analysis for Business Decisions

Prereq: None

G (Fall)

4-0-5 units

undefined Restricted to first-year Sloan master's students.

15.011 Economic Analysis for Business Decisions

Subject meets with 15.0111

Prereq: None

G (Fall)

4-0-5 units

Introduces principles of microeconomics as a framework for making more informed managerial decisions and policy analysis. Includes the analysis of competitive markets with supply and demand, sources of market power and strategic pricing. Also provides an introduction to game theory to illustrate competition, anti-trust policy, and how to generate cooperation both within and between firms. Expectations and evaluation criteria differ for students taking graduate version; consult syllabus or instructor for specific details. Intended for non-MBA students.

J. Doyle

15.0111 Economic Analysis for Business Decisions

Subject meets with 15.011

Prereq: None

U (Fall)

4-0-5 units

Introduces principles of microeconomics as a framework for making more informed managerial decisions and policy analysis. Includes the analysis of competitive markets with supply and demand, sources of market power and strategic pricing. Also provides an introduction to game theory to illustrate competition, anti-trust policy, and how to generate cooperation both within and between firms. Expectations and evaluation criteria differ for students taking graduate version; consult syllabus or instructor for specific details.

J. Doyle

15.012 Applied Macro- and International Economics

Prereq: None

G (Spring; first half of term)

4-0-2 units

Uses case studies to investigate the macroeconomic environment in which firms operate. Subject develops the basic tools of macro and international economics: monetary and fiscal policy, growth theory and exchange rates. 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. Evaluates different strategies of economic development, including an understanding of growth and development and the role of debt and foreign aid.

Staff

15.013 Industrial Economics for Strategic Decisions

Prereq: 15.010 or 15.011

Acad Year 2016-2017: Not offered

Acad Year 2017-2018: G (Fall)

3-0-9 units

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 (Spring; second half of term)
 4-0-2 units

Establishes understanding of the development processes of societies and economies. Studies several dimensions of sustainability (environmental, social, political, institutional, economy, organizational, relational, and personal) and the balance among them. Explores the basics of governmental intervention, focusing on areas such as the judicial system, environment, social security, and health. Builds skills to determine what type of policy is most appropriate. Considers implications of new technologies on the financial sector: internationalization of currencies, mobile payment systems, and cryptocurrencies. Discusses the institutional framework to ensure choices are sustainable across all dimensions and applications.

R. Rigobon

15.015 Macro and International Economics

Prereq: Permission of instructor
 G (Fall; first half of term)
 2-0-4 units

Focuses on the policy and economic environment of firms. Subject divided in two parts: study of the closed economy and how monetary and fiscal policy interacts with employment, GNP, inflation, and interest rates; and study of the open economy with discussion of recent financial and currency crises in developed and emerging markets. Restricted to Sloan Fellows.

A. Cavallo

15.021[J] Real Estate Economics

Same subject as 11.433[J]
 Prereq: 14.01, 15.010, or 15.011
 G (Fall)
 4-0-8 units

See description under subject 11.433[J].

W. C. Wheaton

15.023[J] Global Climate Change: Economics, Science, and Policy

Same subject as 12.848[J]
 Subject meets with 12.348[J], 15.026[J]
 Prereq: Calculus II (GIR); 5.60; 14.01 or 15.010; or permission of instructor
 Acad Year 2016-2017: Not offered
 Acad Year 2017-2018: G (Spring)
 3-0-6 units

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 units
 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

Subject meets with 15.0251
 Prereq: 15.010, 15.011, 15.015, or 14.01
 Acad Year 2016-2017: Not offered
 Acad Year 2017-2018: G (Spring)
 3-0-6 units

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. Meets with 15.0251 when offered concurrently. Expectations and evaluation criteria differ for students taking graduate version; consult syllabus or instructor for specific details.

A. Bonatti

15.0251 Game Theory for Strategic Advantage

Subject meets with 15.025
 Prereq: 15.0111 or 14.01
 Acad Year 2016-2017: Not offered
 Acad Year 2017-2018: U (Spring)
 3-0-6 units

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. Meets with 15.025 when offered concurrently. Expectations and evaluation criteria differ for students taking graduate version; consult syllabus or instructor for specific details.
A. Bonatti

15.026[] Global Climate Change: Economics, Science, and Policy

Same subject as 12.348[]
 Subject meets with 12.848[], 15.023[]
 Prereq: Calculus II (GIR); 5.60; 14.01 or 15.010; or permission of instructor
 Acad Year 2016-2017: Not offered
 Acad Year 2017-2018: U (Spring)
 3-0-6 units

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

15.027 Opportunities in Developing Economies (New)

Prereq: None
 G (Spring)
 6-0-3 units

Investigates the role of the private sector in developing economies, highlighting how solving market failures can improve overall welfare. Covers constraints faced by firms in developing economies: contract enforcement, corruption, political risk, human rights, IP and infrastructure. Uses case studies to discuss successful firms and innovative solutions to these constraints, including public-private partnerships, the role of technology, the role of finance and impact investing.
T. Suri

15.031[] Energy Decisions, Markets, and Policies

Same subject as 11.161[], 14.43[], 17.397[], 21A.415[]
 Prereq: 14.01, 15.0111, or permission of instructor
 Acad Year 2016-2017: Not offered
 Acad Year 2017-2018: U (Fall)
 4-0-8 units. 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.
C. Warshaw

15.032[] Engineering, Economics and Regulation of the Electric Power Sector

Same subject as 6.695[], IDS.505[]
 Prereq: Permission of instructor
 G (Spring)
 3-0-9 units

See description under subject IDS.505[].
C. Vergara

15.034 Metrics for Managers

Subject meets with 15.0341
 Prereq: None
 G (Fall)
 4-0-5 units

Enables students to evaluate the quality of evidence supported by data and to implement an empirical toolkit that provides credible answers to questions in finance, marketing, human resources, strategy, and general business planning. Uses econometrics as the underlying framework to develop deep understanding of regression modelling and its insights for data analytics using big and small data. Focuses primarily on empirical work conducted by students via in-class labs, problem sets, and projects. Expectations and evaluation criteria differ for students taking graduate version; consult syllabus or instructor for specific details.
J. Doyle, R. Rigobon

15.0341 Metrics for Managers

Subject meets with 15.034

Prereq: None

U (Fall)

4-0-5 units

Enables students to evaluate the quality of evidence supported by data and to implement an empirical toolkit that provides credible answers to questions in finance, marketing, human resources, strategy, and general business planning. Uses econometrics as the underlying framework to develop deep understanding of regression modelling and its insights for data analytics using big and small data. Focuses primarily on empirical work conducted by students via in-class labs, problem sets, and projects. Expectations and evaluation criteria differ for students taking graduate version; consult syllabus or instructor for specific details.

J. Doyle, R. Rigobon

15.037[] Energy Economics and Policy

Same subject as 14.444[]

Prereq: 14.01

U (Spring)

4-0-8 units. HASS-S

Credit cannot also be received for 14.444[], 15.038[]

See description under subject 14.444[]. Limited to 60.
C. Knittel

15.038[] Energy Economics and Policy

Same subject as 14.444[]

Prereq: 14.01

G (Spring)

4-0-8 units

Credit cannot also be received for 14.444[], 15.037[]

See description under subject 14.444[]. Limited to 60.
C. Knittel

15.040 Seminar in Managerial Economics

Prereq: 15.010, 15.012

Acad Year 2016-2017: Not offered

Acad Year 2017-2018: G (Spring)

Units arranged

Can be repeated for credit.

Group study of current topics related to managerial economics.
T. M. Stoker

Operations Research/Statistics

15.053 Optimization Methods in Business Analytics

Prereq: None

U (Spring)

4-0-8 units. REST

Introduces optimization methods with a focus on modeling, solution techniques, and analysis. Covers linear programming, network optimization, integer programming, and nonlinear programming. Applications to logistics, manufacturing, data analysis, transportation, marketing, project management, and finance. Includes a project in which student teams select and solve an optimization problem (possibly a large-scale problem) of practical interest.

J. Orlin

15.054[] The Airline Industry

Same subject as 1.232[], 16.71[]

Prereq: None

G (Fall)

3-0-9 units

See description under subject 16.71[].

P. P. Belobaba, A. I. Barnett, C. Barnhart, R. J. Hansman, T. A. Kochan

15.060 Data, Models, and Decisions

Prereq: Permission of instructor

G (Fall)

3-0-6 units

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

15.062[J] Data Mining: Finding the Data and Models that Create Value

Same subject as IDS.145[J]
 Subject meets with 15.0621
 Prereq: 15.060 or 15.075[J]
 G (Fall; second half of term)
 2-0-4 units

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. Includes topics in 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. Meets with 15.0621 when offered concurrently. Students taking graduate version complete additional assignments.

R. E. Welsch

15.0621 Data Mining: Finding the Data and Models that Create Value

Subject meets with 15.062[J], IDS.145[J]
 Prereq: 15.075[J]
 U (Fall; second half of term)
 2-0-4 units

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. Includes topics in 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. Meets with 15.062[J] when offered concurrently. Students taking graduate version complete additional assignments.

R. E. Welsch

15.064[J] Engineering Probability and Statistics

Same subject as IDS.104[J]
 Prereq: Calculus II (GIR)
 G (Summer)
 4-0-8 units

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

15.066[J] System Optimization and Analysis for Operations

Same subject as 2.851[J]
 Prereq: Calculus II (GIR)
 G (Summer)
 4-0-8 units

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 units

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

15.070[J] Advanced Stochastic Processes

Same subject as 6.265[J]
 Prereq: 6.431B, 15.085[J], 18.100A, 18.100B, or 18.100Q
 G (Spring)
 3-0-9 units

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 Ito calculus; functional limit theorems. Applications to finance theory, insurance, queueing and inventory models.

D. Gamarnik, G. Bresler

15.071 The Analytics Edge

Subject meets with 15.0711

Prereq: 15.053 or 15.060

G (Spring)

4-0-8 units

Presents real-world examples in which quantitative methods provide a significant competitive edge that has led to a first order impact on some of today's most important companies. Examples include finance (quantitative asset management and options pricing), sports, health care, revenue management, supply chains, and the Internet. Outlines the competitive landscape. Presents the key quantitative methods that created the edge (data-mining, dynamic optimization, simulation), and discusses their impact. Uses R programming language. Includes team projects. Meets with 15.0711 when offered concurrently. Students taking graduate version complete additional assignments.

D. Bertsimas

15.0711 The Analytics Edge

Subject meets with 15.071

Prereq: 15.053

U (Spring)

4-0-8 units

Presents real-world examples in which quantitative methods provide a significant competitive edge that has led to a first order impact on some of today's most important companies. Examples include finance (quantitative asset management and options pricing), sports, health care, revenue management, supply chains, and the Internet. Outlines the competitive landscape. Presents the key quantitative methods that created the edge (data-mining, dynamic optimization, simulation), and discusses their impact. Uses R programming language. Includes team projects. Meets with 15.071 when offered concurrently. Students taking graduate version complete additional assignments.

D. Bertsimas

15.073[] Logistical and Transportation Planning Methods

Same subject as 1.203[], 16.76[]

Prereq: 6.041B

G (Spring)

3-0-9 units

See description under subject 1.203[].

R. C. Larson, A. I. Barnett

15.074[] Predictive Data Analytics and Statistical Modeling

Same subject as IDS.146[]

Prereq: 6.431B, 15.060, or permission of instructor

Acad Year 2016-2017: Not offered

Acad Year 2017-2018: G (Spring)

4-0-5 units

Credit cannot also be received for 15.0741

Provides a brief review of statistics and regression drawn from advanced topics, such as bootstrap resampling, variable selection, data and regression diagnostics, visualization, and Bayesian and robust methods. Covers 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. Uses statistical computing systems based on application add-ins and stand-alone packages. Case studies involve finance, management science, consulting, risk management, and engineering systems. Term project required. Meets with 15.0741 when offered concurrently. Expectations and evaluation criteria differ for students taking graduate version; consult syllabus or instructor for specific details.

R. E. Welsch

15.0741 Predictive Data Analytics and Statistical Modeling

Prereq: 6.041B

Acad Year 2016-2017: Not offered

Acad Year 2017-2018: U (Spring)

4-0-5 units

Credit cannot also be received for 15.074[], IDS.146[]

Provides a brief review of statistics and regression drawn from advanced topics, such as bootstrap resampling, variable selection, data and regression diagnostics, visualization, and Bayesian and robust methods. Covers 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. Uses statistical computing systems based on application add-ins and stand-alone packages. Case studies involve finance, management science, consulting, risk management, and engineering systems. Term project required. Meets with 15.074[] when offered concurrently. Expectations and evaluation criteria differ for students taking graduate version; consult syllabus or instructor for specific details.

R. E. Welsch

15.075[J] Statistical Thinking and Data Analysis

Same subject as IDS.013[J]

Prereq: 6.041B or 15.079

U (Spring)

3-1-8 units. Institute LAB

Introduces a rigorous treatment of statistical data analysis while helping students develop a strong intuition for the strengths and limitations of various methods. Topics include statistical sampling and uncertainty, estimation, hypothesis testing, linear regression, classification, analysis of variation, and elements of data mining. Involves empirical use of hypothesis testing and other statistical methodologies in several domains, including the assessment of A-B experiments on the web and the identification of genes correlated with diseases.

R. Mazumder

15.077[J] Statistical Learning and Data Mining

Same subject as IDS.147[J]

Prereq: 6.431B, 15.085[J], or 18.600; 18.06 or 18.700

Acad Year 2016-2017: Not offered

Acad Year 2017-2018: G (Spring)

4-0-8 units

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 neighbors, 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. Includes a term project.

R. E. Welsch

15.079 Introduction to Applied Probability

Subject meets with 15.0791

Prereq: Calculus I (GIR)

G (Fall)

4-0-8 units

Presents probability from the perspective of applied mathematics, with strong emphasis on an intuitive overview of key theorems and continuing demonstrations of their usefulness. Covers the laws of probability and numerous important discrete and continuous random variables, both individually and in combination. Introduces simulation. Draws applications from economics, finance, engineering, marketing, public policy, operations management, and operations research. Expectations and evaluation criteria differ for students taking graduate version; consult syllabus or instructor for specific details.

A. Barnett, R. Larson

15.0791 Introduction to Applied Probability (New)

Subject meets with 15.079

Prereq: Calculus I (GIR)

U (Fall)

4-0-8 units. REST

Presents probability from the perspective of applied mathematics, with strong emphasis on an intuitive overview of key theorems and continuing demonstrations of their usefulness. Covers the laws of probability and numerous important discrete and continuous random variables, both individually and in combination. Introduces simulation. Draws applications from economics, finance, engineering, marketing, public policy, operations management, and operations research. Expectations and evaluation criteria differ for students taking graduate version; consult syllabus or instructor for specific details.

A. Barnett, R. Larson

15.081[J] Introduction to Mathematical Programming

Same subject as 6.251[J]

Prereq: 18.06

G (Fall)

4-0-8 units

See description under subject 6.251[J].

J. N. Tsitsiklis, D. Bertsimas

15.082 Network Optimization

Prereq: 15.081[] or permission of instructor
 Acad Year 2016-2017: Not offered
 Acad Year 2017-2018: G (Fall)
 3-0-9 units

Doctoral-level subject on network models and algorithms. Emphasizes design and analysis of efficient algorithms for network flow models. Topics may vary from year to year.

J. Orlin

15.083 Integer Programming and Combinatorial Optimization

Prereq: 15.081[] or permission of instructor
 Acad Year 2016-2017: Not offered
 Acad Year 2017-2018: G (Spring)
 4-0-8 units

In-depth treatment of the modern theory of integer programming and combinatorial optimization, emphasizing geometry, duality, and algorithms. Topics include formulating problems in integer variables, enhancement of formulations, ideal formulations, integer programming duality, linear and semidefinite relaxations, lattices and their applications, the geometry of integer programming, primal methods, cutting plane methods, connections with algebraic geometry, computational complexity, approximation algorithms, heuristic and enumerative algorithms, mixed integer programming and solutions of large-scale problems.

D. J. Bertsimas, A. S. Schulz

15.084[] Nonlinear Optimization

Same subject as 6.252[]
 Prereq: 18.06; 18.100A, 18.100B, or 18.100C
 G (Spring)
 4-0-8 units

See description under subject 6.252[].
R. M. Freund, D. P. Bertsekas, G. Perakis

15.085[] Fundamentals of Probability

Same subject as 6.436[]
 Prereq: Calculus II (GIR)
 G (Fall)
 4-0-8 units

See description under subject 6.436[].
J. N. Tsitsiklis, D. Gamarnik

15.089 Analytics Capstone (New)

Prereq: None
 G (IAP, Spring, Summer)
 Units arranged
 Can be repeated for credit.

Practical application of business analytics problems within a real company. Teams of 1-2 students, matched with company projects, visit companies to define project and scope. In class, students refine and improve on projects and devise methods for solving problems for their select companies. Mentors are assigned to each team. The culmination of the program is summer, on-site, practical training. Restricted to Master of Business Analytics students.

D. Bertsimas

15.093[] Optimization Methods

Same subject as 6.255[], IDS.200[]
 Prereq: 18.06
 G (Fall)
 4-0-8 units

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

15.094[] Robust Modeling, Optimization, and Computation

Same subject as 1.142[]
 Prereq: 18.06 or permission of instructor
 G (Spring)
 4-0-8 units

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

15.096 Prediction: Machine Learning and Statistics

Prereq: None

Acad Year 2016-2017: Not offered

Acad Year 2017-2018: G (Spring)

3-0-9 units

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 Statistics and Data Analysis**

Prereq: Permission of instructor

Acad Year 2016-2017: Not offered

Acad Year 2017-2018: G (Spring)

Units arranged

Group study of current topics related to statistics and data analysis.

*C. Rudin***15.098 Seminar in Applied Probability and Stochastic Processes**

Prereq: 6.431B

Acad Year 2016-2017: Not offered

Acad Year 2017-2018: G (Fall)

2-0-4 units

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 (Fall, Spring)

Units arranged

Can be repeated for credit.

Doctoral student seminar covering current topics related to operations research.

*D. Bertsimas, R. Freund, T. L. Magnanti, J. Orlin, G. Perakis, A. S. Schulz***Health Care Management****15.122[[Critical Reading and Technical Assessment of Biomedical Information**

Same subject as HST.977[[

Prereq: SB degree in Biological Science or permission of instructor
G (Spring; first half of term)

1-0-2 units

See description under subject HST.977[[.

*S. Lapidus, J. Karp***15.124[[Evaluating a Biomedical Business Concept**

Same subject as HST.973[[

Prereq: None

G (Fall)

3-0-6 units

See description under subject HST.973[[. Enrollment limited.

*R. J. Cohen***15.128[[Revolutionary Ventures: How to Invent and Deploy Transformative Technologies**

Same subject as 9.455[[, 20.454[[, MAS.883[[

Prereq: Permission of instructor

G (Fall)

2-0-7 units

See description under subject MAS.883[[.

*J. Bonsen, J. Jacobson***15.132[[Medicine for Managers and Entrepreneurs Proseminar**

Same subject as HST.972[[

Prereq: None

G (Spring)

3-0-6 units

Provides students with basic business-oriented clinical and technological knowledge related to health, healthcare and medicine through engagements with clinical and industry experts. Each session focuses on a specific field of medicine. Speakers include a basic science and/or clinical expert and a CEO or other senior executive involved in cutting-edge innovation in each area.

R. J. Cohen

15.136[J] Principles and Practice of Drug Development

Same subject as 7.547[J], 10.547[J], HST.920[J], IDS.620[J]

Prereq: Permission of instructor

G (Fall)

3-0-6 units

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*

15.137[J] Case Studies and Strategies in Drug Discovery and Development

Same subject as 7.549[J], 20.486[J], HST.916[J]

Prereq: None

G (Spring)

2-0-4 units

See description under subject 20.486[J].

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

15.141[J] Economics of the Health Care Industries

Same subject as HST.918[J]

Prereq: Permission of instructor

Acad Year 2016-2017: Not offered

Acad Year 2017-2018: G (Spring)

3-0-6 units

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.

J. Doyle

Global Economics Management

15.218 Global Economic Challenges and Opportunities

Prereq: None

G (Spring)

3-0-6 units

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, banking, European union, aging populations, inequality and poverty, oil and commodity markets, central bank policies, international institutions, and developments in emerging/emerged economies such as Brazil, Russia, India, and China. Some background in international economics recommended. *A. Orphanides*

15.220 New Models for Global Business

Prereq: None

Acad Year 2016-2017: Not offered

Acad Year 2017-2018: G (Fall; second half of term)

3-0-3 units

Explores international dimensions of strategic management, and equips students to design strategies and structures that work effectively in an increasingly complex world economy. Focuses on a range of industries, from technology-based firms with global roots to emerging market multinationals. Topics include managing and leveraging big data, social and peer-to-peer networks, technology, and talent across national borders to develop capabilities and enhance competitive advantage. Includes a final group project in which students apply class concepts to evaluate strategic options for a startup or established global company of their choice. No final exam.

V. Karplus

15.221 Global Strategy and Organization

Prereq: None

G (Spring; first half of term)

3-0-3 units

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 units

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 units

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

Acad Year 2016-2017: Not offered

Acad Year 2017-2018: G (Spring)

Units arranged

Can be repeated for credit.

Group study of current topics related to international business.

*Staff***15.232 Effective Business Models in Frontier Markets**

Prereq: None

G (Spring; first half of term)

3-0-3 units

Examines how new approaches to operations, revenue, marketing, finance, and strategy enable improved social outcomes in resource-limited settings across Africa, Latin America, and Asia. Draws on system dynamics, design thinking, and strategic analysis. Explores success and failure in attempts to innovate and scale in product and service 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 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

Acad Year 2016-2017: Not offered

Acad Year 2017-2018: G (Spring)

3-0-9 units

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. Preference to students who have taken 15.232. Admission by application and interview in the prior November and December. Graduate students only.

A. Sastry

15.248 Israel Lab: Startup Nation's Entrepreneurship and Innovation Ecosystem (New)

Prereq: None
 G (Fall, IAP; second half of term)
 3-0-6 units

Practical study of Israel's innovation and entrepreneurial ecosystem. On-campus component provides context about the country and its social and geopolitical issues; also introduces entrepreneurship lessons and team dynamics. During IAP, student teams work at the Israeli host organizations on complex problems in critical areas, such as high-tech, biotech, clean technology, and communications, with an emphasis on early stage ventures and their growth. Restricted to graduate students.
J. Cohen, C. Ortiz

15.249 Institutions, Society, and International Business

Prereq: None
 Acad Year 2016-2017: Not offered
 Acad Year 2017-2018: 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 units

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.
Consult S. Sacca

15.269 Leadership Stories: Literature, Ethics, and Authority

Prereq: None
 G (Fall)
 3-0-6 units

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.
L. Hafrey

Communication

15.270 Ethical Practice: Leading Through Professionalism, Social Responsibility, and System Design

Prereq: None
 G (Spring; partial term)
 3-0-3 units

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

15.276 Communicating with Data

Prereq: None
 U (Spring)
 3-0-9 units

Focuses on how to communicate data clearly and effectively in a variety of situations. Develops skills to deliver data-oriented communications in both oral and written formats. Students participate in self-assessments and peer feedback. Final project involves a team presentation on a complex topic. Instruction in written and oral communication provided throughout course.
M. Kazakoff, B. Shields

15.277 Seminar in Communications

Prereq: None

Acad Year 2016-2017: Not offered

Acad Year 2017-2018: G (Spring)

Units arranged

Can be repeated for credit.

undefined

15.278 Seminar in Communications

Prereq: None

Acad Year 2016-2017: Not offered

Acad Year 2017-2018: G (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 units

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.

*L. Breslow***15.280 Communication for Leaders**

Prereq: Permission of instructor

G (Fall)

3-1-5 units

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, R. Pittore, V. Healy-Tangney, K. Blackburn, M. Kazakoff, J. Yates, B. Shields

15.281 Advanced Leadership Communication

Prereq: 15.279, 15.280, or permission of instructor

G (Spring)

3-0-6 units

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, K. Blackburn, B. Shields, J. Yates, V. Healy-Tangney

15.282 EnActing Leadership: Shakespeare and Performance

Prereq: None

G (Spring)

3-0-6 units

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***15.283 Social Media Management: Persuasion in Networked Culture (New)**

Prereq: None

G (Spring)

3-0-6 units

Explores how organizations and leaders can maximize the business value of social media platforms. Provides a framework and best practices for social media management, enhances understanding of strategic communication within the social media context, and improves social media communication skills. Assignments include case analysis, weekly blogging, and a final group project on social media strategy and implementation.

B. Shields

15.284 Strategic Leadership Communication (New)

Prereq: None
G (Fall; partial term)
3-0-3 units

Introduces the essentials of how individuals and organizations develop and implement effective communication strategies, focusing on persuasion, audience analysis, communicator credibility, message construction, and delivery. Includes oral presentations and writing assignments with feedback to help students improve their communication effectiveness. Provides instruction to create communication strategies, develop and present clearly organized and powerful presentations, expand personal oral delivery and writing styles, and enhance presentations through effective visual aids. Restricted to Sloan Fellows.

N. Hartman, L. Breslow

15.289 Doctoral Seminar: Communication Skills for Academics

Prereq: Permission of instructor
Acad Year 2016-2017: Not offered
Acad Year 2017-2018: G (Spring)
3-0-3 units

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. Limited to 20; priority to Sloan doctoral students who have completed their first year.

J. Yates, L. Breslow

Work and Organizational Studies

15.301 Managerial Psychology Laboratory

Prereq: None
U (Fall, Spring)
3-3-9 units. 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: J. Carroll

Spring: P. Osterman

15.304 Being Effective: Power and Influence (New)

Prereq: None
G (Spring)
3-0-6 units

Discusses how to map power and interest patterns in organizations, how to understand your own interests and objectives, and how to operate effectively in organizational environments. Provides frameworks as well as a range of practical tools to address these goals. Utilizes a wide range of material drawn from the business and public worlds.

P. Osterman

15.305 Leadership and Management

Prereq: Permission of instructor
Acad Year 2016-2017: Not offered
Acad Year 2017-2018: U (Fall)
3-0-6 units

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: J. Camille, C. Prior

15.307 Leadership and Ethics

Prereq: None
G (Fall)
2-0-0 units

Foundations, pillars, principles and mantras of outstanding leadership introduced through in-class discussions and case studies presented by senior industry leaders (LGO and non-LGO alumni). Alumni also share their personal leadership experiences with the class. Leaders for Global Operations students only.

V. Erdekian

15.310 Managerial Psychology

Prereq: None
 G (Fall, Spring)
 2-1-6 units

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: J. Carroll

Spring: P. Osterman

15.311 Organizational Processes

Prereq: Permission of instructor
 G (Fall)
 2-3-4 units

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.

K. Kellogg, E. Apfelbaum, C. Turco

15.312 Organizational Processes for Business Analytics (New)

Prereq: None
 U (Fall)
 3-0-9 units

Develops appreciation for organizational dynamics and competence in navigating social networks, working in a team, demystifying rewards and incentives, leveraging the crowd, understanding change initiatives, and making sound decisions. Provides instruction and practice in written and oral communication through presentations, and interpersonal and group exercises.

R. Reagans, L. Breslow

15.316 Building and Leading Effective Teams

Prereq: None
 G (Summer)
 2-1-0 units

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 semesters, 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 (Fall)
 3-0-6 units
 Can be repeated for credit. Credit cannot also be received for 15.739

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 units

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

Prereq: None

G (Fall, Spring; second half of term)

3-0-3 units

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; first half of term)

3-0-3 units

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

15.323 Leading from the Middle

Prereq: None

G (Spring; second half of term)

2-0-1 units

Students and Leaders for Global Operations (LGO) alumni develop and present case studies that focus on the challenges and opportunities of leading from positions in the middle of an organization. Restricted to Leaders for Global Operations program students.

L. Hafrey

15.324 Practical leadership

Prereq: None

Acad Year 2016-2017: Not offered

Acad Year 2017-2018: G (Spring; second half of term)

3-0-3 units

Strengthens leadership capacities through feedback, reflection, and practice. 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

G (Fall; second half of term)

2-0-1 units

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.

Consult S. Sacca

15.326 Seminar in Leadership II

Prereq: 15.325

G (Spring)

2-0-1 units

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: None
 G (Summer)
 Units arranged
 Can be repeated for credit.

undefined

15.329 Seminar in Organizational Studies

Prereq: None
 Acad Year 2016-2017: Not offered
 Acad Year 2017-2018: G (Spring)
 Units arranged
 Can be repeated for credit.

Group study of current topics related to organizational studies.
Consult D. G. Ancona

15.339 Distributed Leadership Workshop

Prereq: None
 G (IAP)
 2-0-4 units

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. Ancona, T. Malone, W. Orlikowski

15.341 Individuals, Groups, and Organizations

Prereq: Permission of instructor
 Acad Year 2016-2017: Not offered
 Acad Year 2017-2018: G (Fall)
 3-0-9 units

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 units

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 units
 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.
J. Carroll

15.347 Doctoral Seminar in Research Methods I

Prereq: Permission of instructor
 G (Spring)
 3-0-9 units

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.
M. Amengual

15.348 Doctoral Seminar in Research Methods II

Prereq: 15.347 or permission of instructor

G (Fall)

3-0-6 units

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

Technology, Innovation and Entrepreneurship

15.350 Managing Technological Innovation and Entrepreneurship

Prereq: None

Acad Year 2016-2017: Not offered

Acad Year 2017-2018: G (Spring)

3-0-6 units

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

15.356 Product and Service Development in the Internet Age

Prereq: None

G (Spring; first half of term)

3-0-3 units

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 2016-2017: Not offered

Acad Year 2017-2018: G (Fall)

3-0-6 units

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 units

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

15.359[J] Innovation Engineering: Moving Ideas to Impact (New)

Same subject as 6.901[J]

Prereq: None

U (Fall)

3-3-6 units

Designed for students to gain the perspective of a Chief Technology Officer of a start-up, large corporation, or a not-for-profit. Details the innovation process, from an idea's inception through impact in the economy, regardless of organizational setting. Explores how solutions are developed to become ready for broader market deployment. Includes testing and development of the problem-solution fit, probing of solutions for robustness, and testing of both technical and operational scaling of proposed solutions. Examines the human aspects of innovation, specifically issues of team building and readiness. Considers the broader system for innovation, including the role of key stakeholders in shaping its success in order to arrive at an impactful solution. Addresses intellectual property, the effect of regulations and social and cultural differences across varied global markets, and the personal skillset necessary to align and manage these issues.

*V. Bulovic, F. Murray***15.360 Introduction to Technological Entrepreneurship**

Prereq: Permission of instructor

G (Fall)

2-0-1 units

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 (EI) MBA track.

*E. Roberts***15.363[J] Strategic Decision Making in the Life Sciences**

Same subject as HST.971[J]

Prereq: None

G (Spring)

3-0-6 units

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***15.364 Regional Entrepreneurship Acceleration Lab (REAL)**

Prereq: None

G (Spring)

3-0-6 units

Credit cannot also be received for 15.3641

Aimed at students seeking a research-based but action-oriented understanding of innovation ecosystems, such as Silicon Valley, Kendall Square/Massachusetts, and other sites across the globe. Provides a framework for analyzing these critical innovation economies. Outlines the design and delivery of policies and programs (e.g., accelerators, prizes, tax policy, immigration policy) intended to accelerate innovation-driven entrepreneurship. Takes a stakeholder perspective to examine the role of entrepreneurs, risk capital providers, large corporations, governments and universities in innovation-driven entrepreneurship. Meets with 15.364 when offered concurrently. Expectations and evaluation criteria differ for students taking graduate version; consult syllabus or instructor for specific details.

P. Budden, F. Murray

**15.3641 Regional Entrepreneurship Acceleration Lab (REAL)
(New)**

Prereq: None

U (Spring)

3-0-6 units

Credit cannot also be received for 15.364

Aimed at students seeking a research-based but action-oriented understanding of innovation ecosystems, such as Silicon Valley, Kendall Square/Massachusetts, and other sites across the globe. Provides a framework for analyzing these critical innovation economies. Outlines the design and delivery of policies and programs (e.g., accelerators, prizes, tax policy, immigration policy) intended to accelerate innovation-driven entrepreneurship. Takes a stakeholder perspective to examine the role of entrepreneurs, risk capital providers, large corporations, governments and universities in innovation-driven entrepreneurship. Meets with 15.364 when offered concurrently. Expectations and evaluation criteria differ for students taking graduate version; consult syllabus or instructor for specific details.

P. Budden, F. Murray

15.366 Energy Ventures

Prereq: 15.910; 15.390 or 15.371[]; 10.391[] or 10.579[]

G (Fall)

3-0-9 units

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

15.367[] Healthcare Ventures

Same subject as HST.978[]

Prereq: 15.910; 15.390 or 10.391[] or 10.579[]

G (Spring)

3-0-9 units

See description under subject HST.978[]. Enrollment by application only

M. Gray, Z. Chu

15.369 Seminar in Corporate Entrepreneurship

Prereq: 15.310 or 15.311

Acad Year 2016-2017: Not offered

Acad Year 2017-2018: G (Fall; partial term)

3-0-3 units

Addresses the practical challenges of making an established company entrepreneurial and examines various roles related to corporate entrepreneurship. Outside speakers complement faculty lectures. Topics may vary from term to term.

A. Kacperczyk, C. Kiefer

15.371[] Innovation Teams

Same subject as 10.807[]

Prereq: 15.911 or permission of instructor

G (Fall, Spring)

4-4-4 units

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, N. Afeyan

15.372 Experimental Innovation Lab (New)

Prereq: None

G (Fall)

3-3-3 units

Develops the skills needed to run randomized experiments (from design through analysis) in business settings in order to help firms innovate and shape their strategy. Provides foundational knowledge related to the basic structure of a good experiment, analysis methods, randomization, and reasons why even well-planned experiments may fail. Working in small teams, students design, run, and present the results of randomized trials with partner companies. Application required.

D. Sull, N. Thompson

15.373[J] Venture Engineering

Same subject as 2.912[J], 3.085[J]

Prereq: None

U (Spring)

3-0-9 units

Provides a framework for the development, implementation, and growth of innovative ventures in dynamic environments. Deepens understanding of the core technical, customer, and strategic choices and challenges facing start-up innovators. Emphasizes the interdependent choices entrepreneurs must make under conditions of high uncertainty. Intended for students who seek to leverage their engineering and science background through innovation-driven entrepreneurship.

S. Stern, E. Fitzgerald

15.375[J] Development Ventures

Same subject as EC.731[J], MAS.665[J]

Prereq: Permission of instructor

G (Fall)

3-0-9 units

See description under subject MAS.665[J].

J. Bonsen, A. Pentland, C. Breazeal

15.376[J] Media Ventures

Same subject as MAS.664[J]

Prereq: None

G (Spring)

3-0-6 units

Can be repeated for credit.

See description under subject MAS.664[J].

A. Pentland, J. Bonsen

15.377[J] Linked Data Ventures

Same subject as 6.932[J]

Prereq: 6.005, 6.033, or permission of instructor

G (Spring)

3-0-9 units

See description under subject 6.932[J].

T. Berners-Lee, L. Kagal, K. Rae, R. Sturdevant

15.378 Building an Entrepreneurial Venture: Advanced Tools and Techniques

Subject meets with 15.3781

Prereq: Permission of instructor

G (Fall, Spring)

3-1-8 units

Intensive, project-based subject intended for startup teams already working on building a new, high-impact venture. Applies advanced entrepreneurial techniques to build and iterate a venture in a time-compressed manner. Includes weekly coaching sessions with instructors and peers, as well as highly interactive and customized sessions that provide practical, in-depth coverage on key topics in entrepreneurship. Topics include venture creation, primary market research, product development, market adoption, team and culture, and scaling processes with constrained resources. Expectations and evaluation criteria differ for students taking graduate version; consult syllabus or instructor for specific details. Application required; consult instructor. No listeners.

B. Aulet, J. Baum, E. Chen

15.3781 Building an Entrepreneurial Venture: Advanced Tools and Techniques

Subject meets with 15.378

Prereq: 15.3901 or permission of instructor

U (Fall, Spring)

3-1-8 units

Intensive, project-based subject intended for startup teams already working on building a new, high-impact venture. Applies advanced entrepreneurial techniques to build and iterate a venture in a time-compressed manner. Includes weekly coaching sessions with instructors and peers, as well as highly interactive and customized sessions that provide practical, in-depth coverage on key topics in entrepreneurship. Topics include venture creation, primary market research, product development, market adoption, team and culture, and scaling processes with constrained resources. Expectations and evaluation criteria differ for students taking graduate version; consult syllabus or instructor for specific details. Application required; consult instructor. No listeners.

B. Aulet, J. Baum, E. Chen

15.385 Social Innovation and Entrepreneurship

Prereq: 15.911

G (Spring)

3-0-6 units

Students work individually or in teams to develop a business plan for an enterprise (for- or nonprofit) 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 units

Develops 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. Focuses on how to quickly define issues, determine and evaluate options, and take critical and precipitous actions to address the situation. No listeners.

P. Kurzina

15.387 Entrepreneurial Sales

Prereq: None

G (Spring)

3-0-9 units

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.

L. Shipley

15.389 Global Entrepreneurship Lab

Prereq: None

G (Fall, IAP)

2-0-10 units

Practical study of the climate for innovation and determinants of entrepreneurial success. Teams of students work with top management in one company to gain experience in running and building a new enterprise. Focuses primarily on start-ups operating in emerging markets. Restricted to graduate students.

S. Johnson, M. Jester

15.390 New Enterprises

Subject meets with 15.3901

Prereq: None

G (Fall, Spring)

2-1-6 units

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 15.3901 when offered concurrently.

W. Aulet, C. Catalini

15.3901 New Enterprises

Subject meets with 15.390

Prereq: None

U (Fall, Spring)

2-1-6 units

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. Students taking graduate version complete additional assignments.

W. Aulet, C. Catalini

15.392 Entrepreneurial Product Development and Marketing

Prereq: 15.371[] or 15.390
 G (Spring; first half of term)
 3-0-3 units

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
 Acad Year 2016-2017: Not offered
 Acad Year 2017-2018: G (Spring)
 3-0-6 units
 Credit cannot also be received for 15.3941

Explores key organizational decisions that have far-reaching consequences for founders and their ventures. Through a series of cases, readings, and simulations, students examine five founders' 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, and 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. Meets with 15.3941 when offered concurrently. Expectations and evaluation criteria differ for students taking graduate version; consult syllabus or instructor for specific details.

M. Marx

15.3941 Dilemmas in Founding New Ventures (New)

Prereq: None
 Acad Year 2016-2017: Not offered
 Acad Year 2017-2018: U (Spring)
 3-0-6 units
 Credit cannot also be received for 15.394

Explores key organizational decisions that have far-reaching consequences for founders and their ventures. Through a series of cases, readings, and simulations, students examine five founders' 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 and 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. Meets with 15.394 when offered concurrently. Expectations and evaluation criteria differ for students taking graduate version; consult syllabus or instructor for specific details.

M. Marx

15.395 Entrepreneurship Without Borders

Prereq: None
 G (Fall; first half of term)
 3-0-3 units

Examines opportunities and problems for entrepreneurs globally, including Europe, Latin America, and Asia. Covers linkages between the business environment, the institutional framework, and new venture creation. Special focus on blockchain technology. 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 based primarily on case studies.

S. Johnson

15.396 Seminar in Entrepreneurship

Prereq: None
 Acad Year 2016-2017: Not offered
 Acad Year 2017-2018: G (Spring)
 Units arranged

Group study of current topics related to entrepreneurship.

W. Aulet

15.397 Seminar in Entrepreneurship

Prereq: None
 G (Fall, IAP)
 Units arranged
 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: None

G (Spring)

2-0-4 units

Focuses on the role of the CEO. Provides a unique opportunity for students to interact with some of the world's leading CEOs who are invited to participate in each class. Topics include the job of the CEO, corporate strategy, career learnings and advice. Emphasizes in particular how the CEO is reacting to critical crossroads.

P. Kurzina

15.399 Entrepreneurship Lab

Prereq: None

G (Fall, Spring)

2-9-1 units

Project-based course, in which teams of students from MIT and Harvard work with startups on problems of strategic importance to the venture. Popular sectors include software, hardware, robotics, cleantech, life sciences. 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 startup companies.

C. Catalini, J. Dougherty

Finance

15.401 Managerial Finance

Prereq: None

G (Fall, Spring)

4-0-5 units

Credit cannot also be received for 15.417

Covers the fundamentals of modern financial analysis that are essential to any manager, entrepreneur, investor, or other business professional. Topics include valuation, risk analysis, personal and corporate investment decisions, and an introduction to security analysis and asset management. A prerequisite for all other finance electives offered by the Finance Group. Meets with 15.417 when offered concurrently. Expectations and evaluation criteria differ for students taking graduate version; consult syllabus or instructor for specific details.

Consult K. Nixon

15.402 Corporate Finance

Prereq: 15.401

G (Fall, Spring)

3-0-6 units

Credit cannot also be received for 15.418

Introduction to 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. Meets with 15.418 when offered concurrently.

P. Asquith, A. Malenko

15.403 Introduction to the Practice of Finance

Prereq: None

G (Fall)

2-0-1 units

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

15.414 Financial Management

Prereq: 15.511

G (Summer)

3-0-6 units

Credit cannot also be received for 15.724

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.

Staff

15.415 Finance Theory

Prereq: None

G (Summer)

6-0-9 units

Core theory of capital markets and corporate finance. Topics include functions and operations of capital markets, analysis of consumption-investment decisions of investors, valuation theory, financial securities, risk analysis, portfolio theory, pricing models of risky assets, theory of efficient markets, as well as investment, financing and risk management decisions of firms. Provides a theoretical foundation of finance and its applications. Restricted to students in the Master of Finance Program.

*L. Kogan, J. Wang***15.416[J] Introduction to Financial Economics**

Same subject as 14.416[J]

Prereq: 14.121, 14.122

G (Fall)

4-0-8 units

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. Ross***15.417 Laboratory in Investments**

Prereq: None

U (Spring)

4-2-9 units. Institute LAB

Credit cannot also be received for 15.401

Covers fundamentals of modern financial analysis that are essential to any manager, entrepreneur, investor, or other business professional. Topics include valuation, risk analysis, personal and corporate investment decisions, and an introduction to security analysis and asset management. Laboratory introduces students to methods of modern quantitative finance and to practices of the investment management industry. Projects include implementation and testing of investment strategies and asset pricing models using real-world market data. Instruction and practice in oral and written communication provided.

*P. Mende, G. Rao***15.418 Laboratory in Corporate Finance**

Prereq: 15.417

U (Fall, Spring)

4-2-9 units. Institute LAB

Credit cannot also be received for 15.402

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. Expectations and evaluation criteria differ for students taking graduate version; consult syllabus or instructor for specific details.

*S. Myers***15.426[J] Real Estate Finance and Investment**

Same subject as 11.431[J]

Prereq: Permission of instructor

G (Fall)

4-0-8 units

See description under subject 11.431[J].

*D. Geltner***15.427[J] Real Estate Capital Markets**

Same subject as 11.432[J]

Prereq: 11.431[J]; 15.402 or 15.414

G (Spring; first half of term)

2-0-4 units

See description under subject 11.432[J].

*D. Geltner***15.428[J] Tools for Analysis: Design for Real Estate and Infrastructure Development**

Same subject as 11.434[J], IDS.720[J]

Prereq: None

G (Spring; second half of term)

2-0-4 units

See description under subject 11.434[J].

D. Geltner, R. de Neufville

15.429[J] Securitization of Mortgages and Other Assets

Same subject as 11.353[J]

Prereq: 15.426[J], 15.401, or permission of instructor

G (Spring)

3-0-6 units

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 and Venture Capital

Prereq: 15.402, 15.414, or 15.415

G (Fall)

3-0-6 units

Credit cannot also be received for 15.4311

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 a 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. Meets with 15.4311 when offered concurrently. Expectations and evaluation criteria for graduate students will differ from those of undergraduates; consult syllabus or instructor for specific details.

Staff

15.4311 Entrepreneurial Finance and Venture Capital

Prereq: 15.418

U (Spring)

3-0-6 units

Credit cannot also be received for 15.431

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 a 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. Meets with 15.431 when offered concurrently. Expectations and evaluation criteria for graduate students will differ from those of undergraduates; consult syllabus or instructor for specific details.

A. Schoar

15.433 Financial Markets

Subject meets with 15.4331

Prereq: 15.401, 15.414, or 15.415

G (Fall)

3-0-6 units

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. Meets with 15.4331 when offered concurrently. Students taking graduate version complete additional assignments. Preference to Course 15 students.

J. Pan

15.4331 Financial Markets

Subject meets with 15.433

Prereq: 15.411

U (Fall)

3-0-6 units

Covers 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; empirical behavior of security prices; market efficiency; performance evaluation; and behavioral finance. Meets with 15.433 when offered concurrently. Students taking graduate version complete additional assignments. Preference to Course 15 students.

J. Pan

15.434 Advanced Corporate Finance

Subject meets with 15.4341

Prereq: 15.402, 15.414, or 15.415

G (Fall)

3-0-6 units

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. Students taking the graduate version complete additional assignments.

N. Bergman

15.4341 Advanced Corporate Finance

Subject meets with 15.434

Prereq: 15.418

U (Fall)

3-0-6 units

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. Students taking graduate version complete additional assignments.

N. Bergman

15.437 Options and Futures Markets

Prereq: 15.401, 15.414, or 15.415

G (Fall)

3-0-6 units

Credit cannot also be received for 15.4371

Examines the economic role of options and futures markets. Topics include 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, and applications to corporate securities and other financial instruments. Meets with 15.4371 when offered concurrently. Expectations and evaluation criteria differ for students taking graduate version; consult syllabus or instructor for specific details.

J. C. Cox

15.4371 Options and Futures Markets

Prereq: 15.417

U (Fall)

3-0-6 units

Credit cannot also be received for 15.437

Examines the economic role of options and futures markets. Topics include 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, and applications to corporate securities and other financial instruments. Meets with 15.437 when offered concurrently. Expectations and evaluation criteria differ for students taking graduate version; consult syllabus or instructor for specific details.

J. C. Cox

15.438 Fixed Income Securities and Derivatives

Prereq: 15.401, 15.414, or 15.415

G (Spring)

3-0-6 units

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 units

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

15.440[] Advanced Financial Economics I

Same subject as 14.440[]

Prereq: 15.416[]

G (Spring)

5-0-7 units

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

15.441[] Advanced Financial Economics II

Same subject as 14.441[]

Prereq: 14.121, 14.122, or 15.416[]

G (Spring)

3-0-9 units

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

15.442[] Advanced Financial Economics III

Same subject as 14.442[]

Prereq: 14.382, 15.416[], or permission of instructor

G (Fall)

3-0-9 units

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 Corporate Finance

Prereq: 15.402, 15.414, or 15.415

Acad Year 2016-2017: Not offered

Acad Year 2017-2018: G (Spring)

3-0-6 units

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, Acquisitions and Private Equity

Prereq: 15.515 or 15.516; Coreq: 15.402, 15.414, or 15.415

G (Spring)

3-0-6 units

Credit cannot also be received for 15.4451

Discusses a wide range of topics in corporate mergers and buyout transactions. Covers the mergers and acquisitions market, including classic merger agreements, tax inversions, sale auctions, and hostile takeover law and strategy. Also touches on activist investing and shareholder contests for corporate control. Studies how private equity firms operate and how leveraged buyouts are structured, financed, and valued. Provides opportunity for group work, both in and out of class. Meets with 15.4451 when offered concurrently. Expectations and evaluation criteria for graduate students will differ from those of undergraduates; consult syllabus or instructor for specific details.

N. Gregory

15.4451 Mergers, Acquisitions, and Private Equity (New)

Prereq: 15.501; Coreq: 15.402, 15.414, or 15.415

U (Spring)

3-0-6 units

Credit cannot also be received for 15.445

Discusses a wide range of topics in corporate mergers and buyout transactions. Covers the mergers and acquisitions market, including classic merger agreements, tax inversions, sale auctions, and hostile takeover law and strategy. Also touches on activist investing and shareholder contests for corporate control. Studies how private equity firms operate and how leveraged buyouts are structured, financed, and valued. Provides opportunity for group work, both in and out of class. Meets with 15.445 when offered concurrently. Expectations and evaluation criteria for graduate students will differ from those of undergraduates; consult syllabus or instructor for specific details.

N. Gregory

15.447 International Capital Markets

Prereq: 15.401, 15.414, or 15.415

G (Spring)

3-0-6 units

Covers globalization of capital markets and implications for financial management of domestic businesses, multinationals, and portfolios. Topics include currency markets, measuring and managing exchange rate exposure, exchange rate determination and forecasting, international financial instruments and institutions, international trading strategies and valuation, and global financial crises.

J. Parker

15.448-15.449 Seminar in Finance

Prereq: 15.402 or 15.414

G (Fall)

Units arranged

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 units

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.

*H. Chen***15.451 Proseminar in Capital Markets/Investment Management**

Prereq: 15.401, 15.414, or 15.415

G (Fall)

2-0-4 units

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.

*H. Chen, M. Kritzman***15.452 Proseminar in Corporate Finance/Investment Banking**

Prereq: 15.402, 15.414, or 15.415

G (Fall)

3-0-3 units

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 Financial Engineering**

Prereq: 15.401, 15.414, or 15.415

G (Fall)

4-0-5 units

Provides an introduction to financial engineering, covering topics such as asset pricing theory and applications, optimization, market equilibrium, market frictions, risk management, and advanced topics. Assumes solid undergraduate-level background in calculus, probability, statistics, and programming and includes a substantial coding component. Materials and review sessions use R. Students are encouraged but not required to use R for assignments and projects.

*L. Kogan, A. Lo, J. Wang***15.466 Functional and Strategic Finance**

Prereq: 15.433 or 15.437

G (Spring)

3-0-6 units

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 Asset Management, Lifecycle Investing, and Retirement Finance**

Prereq: 15.433

G (Spring)

3-0-6 units

Organized around applying finance science and financial engineering in three related financial-service activities: asset management, lifecycle investing, and retirement finance. 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

15.481[J] Financial Market Dynamics and Human Behavior

Same subject as 6.935[J]

Prereq: 15.401, 15.414, or 15.415

Acad Year 2016-2017: Not offered

Acad Year 2017-2018: G (Spring)

4-0-5 units

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

15.483 Consumer Finance and Financial Products (New)

Prereq: 15.401, 15.414, or 15.415

G (Spring; second half of term)

3-0-3 units

Covers rational and behavioral aspects of consumer financial decision making; current household financial products and competitive landscape in credit, investment, and advising markets; consumer financial product innovations and regulatory issues; securitization and the design and pricing of financial products derived from consumer debt, such as mortgages, credit card receivables, and student loans.

J. Parker

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 units

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; second half of term)

2-0-4 units

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 units

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

15.496 Practice of Finance: Data Technologies for Quantitative Finance

Prereq: 15.401, 15.414, or 15.415

G (Fall)

4-0-5 units

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 units

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.

J. Granja

15.511 Financial Accounting

Prereq: Permission of instructor

G (Summer)

3-0-6 units

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 units

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 units

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 units

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 units

Credit cannot also be received for 15.5181

Provides conceptual framework for thinking about taxation. Topics include taxation of various investments and types of compensation; retirement planning; considerations of choosing an organizational form when starting a business; various methods of merging, acquiring, and divesting business entities; international tax planning rules and strategies; and high wealth planning and 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. Meets with 15.5181 when offered concurrently. Expectations and evaluation criteria for graduate students will differ from those of undergraduates; consult syllabus or instructor for specific details.

M. Hanlon

15.5181 Taxes and Business Strategy

Prereq: 15.501

U (Spring)

3-0-6 units

Credit cannot also be received for 15.518

Provides conceptual framework for thinking about taxation. Topics include taxation of various investments and types of compensation; retirement planning; considerations of choosing an organizational form when starting a business; various methods of merging, acquiring, and divesting business entities; international tax planning rules and strategies; and high wealth planning and estate tax. Applies current debates on various tax policy options to class discussions. Meets with 15.518 when offered concurrently. Expectations and evaluation criteria for graduate students will differ from those of undergraduates; consult syllabus or instructor for specific details.

M. Hanlon

15.521 Management Accounting and Control

Prereq: 15.501, 15.511, 15.515, or 15.516

G (Spring)

3-0-6 units

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 2016-2017: Not offered

Acad Year 2017-2018: G (Spring)

3-0-6 units

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 discusses recent trends in corporate financing including globalization, secularization, and transformation. Explores new securities and institutional factors, particularly tax and accounting factors that affect their design.

P. Asquith

15.535 Business Analysis Using Financial Statements

Prereq: 15.501, 15.511, 15.515, or 15.516; 15.401, 15.414, or 15.415

G (Fall, Spring)

3-0-6 units

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

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

Acad Year 2016-2017: Not offered

Acad Year 2017-2018: G (Spring)

3-0-6 units

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

Acad Year 2016-2017: Not offered

Acad Year 2017-2018: G (Spring)

3-0-6 units

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***15.565[J] Digital Evolution: Managing Web 3.0**

Same subject as IDS.345[J]

Prereq: Permission of instructor

G (Fall)

3-0-6 units

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. Addresses topics such as big data, cloud computing, and cybersecurity. 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)

3-0-3 units

Analysis of the underlying economics of information with management implications. Studies effects of digitization and technology on business strategy and organizational structure. Examines pricing, bundling, and versioning of digital goods, including music, video, software, and communication services. Considers the managerial implications of data-driven decision-making, search, targeted advertising, personalization, privacy, network externalities, open source, and alliances. Readings on fundamental economic principles inform provide context for industry speakers and case discussions.

*E. Brynjolfsson***15.569 Leadership Lab: Leading Sustainable Systems**

Prereq: Permission of instructor

G (Fall, IAP)

6-0-9 units

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**

Prereq: None

G (Fall; second half of term)

3-0-3 units

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 units

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

15.572 Analytics Lab: Action Learning Seminar on Analytics, Machine Learning, and the Digital Economy

Prereq: Permission of instructor

G (Fall)

2-0-7 units

Student teams design and deliver a project based on the use of analytics, machine learning, large data sets, or other digital innovations to create or transform a business or other organization. Teams may be paired up with an organization or propose their own ideas and sites for the project. Culminates with presentation of results to an audience that includes IT experts, entrepreneurs, and executives.

S. Aral, E. Brynjolfsson

15.575 Economics of Information and Technology in Markets and Organizations

Prereq: Permission of instructor

Acad Year 2016-2017: Not offered

Acad Year 2017-2018: G (Fall)

3-0-9 units

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)

3-0-9 units

Examines the assumptions, concepts, theories, and methodologies that inform research into the social aspects of technology. Extensive reading and discussion of research literature aimed at exploring the multiple social phenomena surrounding the development, implementation, use and implications of information technology in organizations. Primarily for doctoral students.

W. J. Orlikowski

15.579-15.580 Seminar in Information Technology

Prereq: None

G (Fall, Spring)

Units arranged

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

G (Fall)

2-0-4 units

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 Essential Law for Business

Prereq: None
G (Fall, Spring)
3-0-6 units

Provides a broad-gauged introduction to business law, including how law shapes business opportunities and risks. Imparts skills necessary for dealing effectively with law-sensitive aspects of company restructurings and mergers and acquisitions; contracts, complex deals, and financial instruments and facilities; innovation in business models, products, and services; and encounters with regulators. Also discusses individual and organizational accountability to private parties and public authorities, and key legal issues in career transitions.

J. Akula

15.616 Basic Business Law, Tilted Towards Key Emerging Issues

Prereq: None
Acad Year 2016-2017: Not offered
Acad Year 2017-2018: G (Fall)
3-0-6 units

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 business. 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
Acad Year 2016-2017: Not offered
Acad Year 2017-2018: G (Spring)
3-0-6 units
Credit cannot also be received for 15.6171

Addresses law-sensitive issues arising in the overlapping contexts of complex deals and financial services and products. Covers financial services regulation, employment and job changes, and civil and criminal accountability. Develops managerial skills for handling law-sensitive situations at individual and organizational levels. Meets with 15.6171 when offered concurrently. Expectations and evaluation criteria differ for students taking graduate version; consult syllabus or instructor for specific details.

J. Akula

15.6171 Deals, Finance, and the Law

Prereq: None
Acad Year 2016-2017: Not offered
Acad Year 2017-2018: U (Spring)
3-0-6 units
Credit cannot also be received for 15.617

Addresses law-sensitive issues arising in the overlapping contexts of complex deals and financial services and products. Covers financial services regulation, employment and job changes, and civil and criminal accountability. Develops managerial skills for handling law-sensitive situations at individual and organizational levels. Meets with 15.617 when offered concurrently. Expectations and evaluation criteria differ for students taking graduate version; consult syllabus or instructor for specific details.

J. Akula

15.618 Entrepreneurship and Innovation: Legal Tools and Frameworks

Prereq: None
G (Fall, Spring)
2-0-4 units
Credit cannot also be received for 15.6181

Focuses on key law-sensitive issues related to launching and growing a startup, including assembling a team; organizing a business entity; ownership and compensation; early financing; managing contracts, employees, and common early business risks; business distress, winding down, and soft landings; and selling a company. Special attention to innovation-driven ventures built around new technologies or business models. Includes in-depth analysis of the legal framework of cutting-edge technologies and rights in intellectual property. Designed to serve both those with a business background and those engaged in research with commercial potential.

J. Akula

15.6181 Entrepreneurship and Innovation: Legal Tools and Frameworks (New)

Prereq: None

U (Spring)

2-0-4 units

Credit cannot also be received for 15.618

Focuses on key law-sensitive issues related to launching and growing a startup, including assembling a team; organizing a business entity; ownership and compensation; early financing; managing contracts, employees, and common early business risks; business distress, winding down, and soft landings; and selling a company. Special attention to innovation-driven ventures built around new technologies or business models. Includes in-depth analysis of the legal framework of cutting-edge technologies and rights in intellectual property. Meets with 15.618 when offered concurrently. Expectations and evaluation criteria differ for students taking graduate version; consult syllabus or instructor for specific details.

J. Akula

15.647-15.649 Seminar in Law

Prereq: None

G (Fall)

Units arranged

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 1.813[[]], 11.466[[]], IDS.437[[]]

Prereq: Permission of instructor

G (Fall)

3-0-9 units

See description under subject IDS.437[[]].

N. Ashford

Industrial Relations and Human Resource Management

15.660 Strategic Human Resource Management

Prereq: 15.311

Acad Year 2016-2017: Not offered

Acad Year 2017-2018: G (Spring)

3-0-6 units

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 11.383[[]]

Prereq: None

G (Spring)

3-6-3 units

Examines opportunities and challenges involved in building and growing businesses that achieve high financial performance and provide good jobs and careers to employees. Students engage participants in the MITx online course title Shaping the Future of Work to learn about the expectations and employment experiences of workers across the world. Through readings, cases, simulations and class visits from industry leaders, explores the underlying principles and business practices that help to secure that alignment between business health and societal well-being.

T. Kochan

15.663 Environmental Law, Policy, and Economics (New)

Prereq: None

G (Fall)

3-0-9 units

Credit cannot also be received for 1.801[], 1.811[], 11.021[], 11.630[], 17.393[], IDS.430[]

Discusses the roles and interactions of Congress, federal agencies, state governments, and the courts in dealing with environmental problems. Topics include common law, administrative law, environmental impact assessments required by the National Environmental Policy Act. Also covers legislation and court decisions dealing with green-house gas emissions, air pollution, water pollution, the control of toxic chemicals and hazardous waste, pollution and accident prevention, community right-to-know, and environmental justice. Explores the role of science and economics in legal decisions, and economic incentives as an alternative or supplement to regulation. Analyzes pollution as an economic problem and a failure of markets. Provides an introduction to basic legal skills, including how to read and understand cases, regulation, and statutes; how to discover the current state of the law in a specific area; and how to take action toward the resolution of environmental problems.

*N. Ashford, C. Caldart***15.665 Power and Negotiation**

Prereq: Permission of instructor

G (Fall, Spring)

3-0-6 units

Credit cannot also be received for 15.672, 15.6721, 15.673, 15.6731, 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.

*J. Curhan***15.667 Negotiation and Conflict Management**

Prereq: Permission of instructor

Acad Year 2016-2017: Not offered

Acad Year 2017-2018: G (Spring)

3-0-6 units

Applies negotiation theory strategies and styles to problems managers and professionals commonly encounter in the workplace. Emphasizes sources of power in negotiation, self-assessment of personal negotiating strengths/weaknesses, and practice in negotiations via role-plays and simulations of common workplace conflicts. Covers conflict management as a direct party and as a manager helping others resolve their conflicts through mediation, investigation, arbitration, and helping the system itself to change as a result of a dispute. Special cases include bullying, harassment, dealing with difficult people, cross-cultural negotiations, and collective actions.

*T. Kochan***15.668 People and Organizations**

Prereq: None

Acad Year 2016-2017: Not offered

Acad Year 2017-2018: U (Spring)

3-0-6 units

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, P. Osterman***15.671 U-Lab: Transforming Self, Business and Society**

Prereq: None

G (Fall; first half of term)

3-0-3 units

Experiential opportunity to practice new leadership skills, such as deep listening, being present (mindfulness), and generative dialogue. In weekly coaching circles, each student has one full session to present their current leadership edge and receive feedback from peer coaches. Includes an additional action learning project.

O. Scharmer

15.672 Negotiation Analysis

Subject meets with 15.6721, 15.673, 15.6731

Prereq: Permission of instructor

G (IAP)

1-0-2 units

Credit cannot also be received for 15.665, 15.712

Presents analytical frameworks and strategies to handle a variety of negotiation situations. Includes simulations, games, videos, lectures, discussion, and multiple opportunities to practice and hone negotiation, communication, and influence skills with extensive personalized feedback. Intended for students with a broad spectrum of backgrounds and experience levels. Six-unit version includes additional class time and outside work. Expectations and evaluation criteria differ for students taking graduate version. Limited to 80 via lottery; consult class website for information and deadlines.

J. Curhan

15.6721 Negotiation Analysis

Subject meets with 15.672, 15.673, 15.6731

Prereq: Permission of instructor

U (IAP)

1-0-2 units

Credit cannot also be received for 15.665, 15.712

Presents analytical frameworks and strategies to handle a variety of negotiation situations. Includes simulations, games, videos, lectures, discussion, and multiple opportunities to practice and hone negotiation, communication, and influence skills with extensive personalized feedback. Intended for students with a broad spectrum of backgrounds and experience levels. Six-unit version includes additional class time and outside work. Expectations and evaluation criteria differ for students taking graduate version. Limited to 80 via lottery; consult class website for information and deadlines.

J. Curhan

15.673 Negotiation Analysis

Subject meets with 15.672, 15.6721, 15.6731

Prereq: Permission of instructor

G (IAP)

2-0-4 units

Credit cannot also be received for 15.665, 15.712

Presents analytical frameworks and strategies to handle a variety of negotiation situations. Includes simulations, games, videos, lectures, discussion, and multiple opportunities to practice and hone negotiation, communication, and influence skills with extensive personalized feedback. Intended for students with a broad spectrum of backgrounds and experience levels. Six-unit version includes additional class time and outside work. Expectations and evaluation criteria differ for students taking graduate version. Limited to 80 via lottery; consult class website for information and deadlines.

J. Curhan

15.6731 Negotiation Analysis

Subject meets with 15.672, 15.6721, 15.673

Prereq: Permission of instructor

U (IAP)

2-0-4 units

Credit cannot also be received for 15.665, 15.712

Presents analytical frameworks and strategies to handle a variety of negotiation situations. Includes simulations, games, videos, lectures, discussion, and multiple opportunities to practice and hone negotiation, communication, and influence skills with extensive personalized feedback. Intended for students with a broad spectrum of backgrounds and experience levels. Six-unit version includes additional class time and outside work. Expectations and evaluation criteria differ for students taking graduate version. Limited to 80 via lottery; consult class website for information and deadlines.

J. Curhan

15.676 Work, Employment, and Industrial Relations Theory

Prereq: Permission of instructor

G (Spring)

2-0-7 units

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[J] Urban Labor Markets and Employment Policy

Same subject as 11.427[J]

Prereq: Permission of instructor

G (Spring)

3-0-9 units

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[J] Political Economy I: Theories of the State and the Economy

Same subject as 14.781[J], 17.100[J]

Prereq: Permission of instructor

G (Spring)

3-0-9 units

See description under subject 17.100[J].

M. Piore, S. Berger

15.691 Research Seminar in Work, Employment and Industrial Relations

Prereq: Permission of instructor

G (Fall)

Units arranged

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: None

G (Fall)

Units arranged

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

G (Fall)

3-0-6 units

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

15.701 Innovation-Driven Entrepreneurial Advantage

Prereq: 15.714 or permission of instructor

G (Spring, Summer)

6-0-6 units

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

15.702 Leading in a Global Context: Macroeconomics and Global Markets

Prereq: Permission of instructor

G (Fall)

6-0-6 units

Can be repeated for credit.

Intensive module on the global economy, combining the key perspectives of macroeconomics and global economic strategy. Focuses on the policy and economic environment of firms, as well as on the development of a more international market in products, services, and capital, and how this affects trade and industries. Presents insights into national economic strategies for development, and into the evolving rules and institutions governing the international economic order. Develops an actionable appreciation for managers of the international dimensions of economic policy and strategy in an increasingly complex world economy. Restricted to Executive MBA students.

Consult J. Hising DiFabio

15.703 Leading with Impact

Prereq: Permission of instructor

G (Spring)

Units arranged

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

15.705 Organizations Lab

Prereq: Permission of instructor or *Coreq: 15.716*

G (Fall, Summer)

3-0-9 units

Preparation 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 Global Strategy

Prereq: Permission of instructor; *Coreq: 15.708*

G (Fall, Spring)

3-0-3 units

Provides students with the evidence, concepts and models for understanding company performance in a global world and the issues facing executives in the early 21st century. Prepares students to manage effectively in today's interconnected world by understanding this changing environment, principles of global strategy, and the relation between global strategy and organization. Focuses on the specificities of strategy and organization of the multinational company. Restricted to Executive MBA students.

Consult J. Hising DiFabio

15.708 Global Organizations Lab

Prereq: Permission of instructor; *Coreq: 15.707*

G (Fall, Spring)

6-0-9 units

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. Hising DiFabio

15.712 Negotiation and Influence

Prereq: Permission of instructor

G (Spring)

3-0-3 units

Credit cannot also be received for 15.665, 15.672, 15.6721, 15.673, 15.6731

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. Restricted to Executive MBA students.

*Consult J. Hising DiFabio***15.714 Competitive Strategy**

Prereq: Permission of instructor

G (IAP, Spring, Summer)

3-0-6 units

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 units

Credit cannot also be received for 15.322

Promotes awareness of and strategies to meet the key challenges leaders face today (and tomorrow). Acquaints students with some of the psychological and sociological dynamics that regularly operate in organizational settings - the less visible but quite powerful "forces" that shape the way employees and managers respond (or don't respond) to a changing world. Restricted to Executive MBA students.

*Consult J. Hising DiFabio***15.717 Organizational Processes**

Prereq: Permission of instructor

G (Fall)

3-0-6 units

Designed to enhance 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. Restricted to Executive MBA students.

*Consult J. Hising DiFabio***15.720 Financial Accounting**

Prereq: Permission of instructor

G (Spring)

3-0-6 units

Credit cannot also be received for 15.511

Examines the basic concepts of corporate financial accounting and reporting, and the role of accounting information in investment decisions, corporate and managerial performance assessment, 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 units

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 theory, data, and judgment in the analysis of corporate decisions and public policy, and in the assessment of changing US and international business environments. Restricted to Executive MBA students.

Consult J. Hising DiFabio

15.723 Advanced Applied Macroeconomics and International Institutions

Prereq: 15.702 or permission of instructor

G (IAP, Spring)

3-0-3 units

Topics draw on current macroeconomic issues and events, such as modern monetary and fiscal policy; financial crisis, contagion, and currency crisis; real exchange rates, purchasing power parity, and long run sustainability; sustainable development; targeting and the new monetary policy regime; and Europe and the Euro: optimal currency areas. Restricted to Executive MBA students.

Consult J. Hising DiFabio

15.724 Financial Management

Prereq: Permission of instructor

G (Fall)

3-0-6 units

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 return, stock pricing and the performance of trading strategies, corporate financing policy, the cost of capital, and risk management. Subject provides a broad overview of both theory and practice.

Restricted to Executive MBA students.

Consult J. Hising DiFabio

15.725 Advanced Marketing Strategy

Prereq: None

G (IAP)

1-0-2 units

Helps students consider the entire marketing mix in light of the strategy of the firm. Reviews customer-based sources of competitive advantage and discusses how to identify, measure, and leverage them. Introduces a method for comparing alternative selling formats (e.g., brick and mortar vs. electronic), aiming to find the most efficient ways to sell different products to different customers. Discusses the myriad ways in which the firm can grow its sources of competitive advantage. Provides practical experience in using tools to identify, evaluate, and develop marketing strategies; design efficient products and selling formats; and plan the use and development of the firm's portfolio of resources. Restricted to Executive MBA students.

Consult J. Hising DiFabio

15.726 Pricing

Prereq: None

G (IAP)

1-0-2 units

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 improving the pricing performance of an old product. Tools covered include monadic pricing surveys, empirical price elasticity calculations, and conjoint. Restricted to Executive MBA students.

Consult J. Hising DiFabio

15.727 The Analytics Edge

Prereq: 15.730 or permission of instructor

G (Spring)

3-0-3 units

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 optimization methods include robust, adaptive and dynamic optimization. Applications include health care, hospital operations, finance, energy, security, internet, and demand modeling. Uses R programming language for data mining and ROME for robust optimization. Restricted to Executive MBA students.

Consult J. Hising DiFabio

15.728 Law and Strategy for the Senior Executive

Prereq: None

G (IAP)

1-0-2 units

Designed to provide the judgment skills needed to plan, manage, and lead when confronting key law-sensitive issues in one's organization and career. Reviews how the law structures both the risks and opportunities relating to issues such as regulatory compliance, major liability exposure, and intellectual property rights. Special attention to how these play out in the context of new technologies. Restricted to Executive MBA students.

Consult J. Hising DiFabio

15.730 Data, Models, and Decisions

Prereq: Permission of instructor

G (Spring)

3-0-6 units

Credit cannot also be received for 15.060

Introduces students to fundamental tools in using data to make informed management decisions. Emphasizes the executive perspective: how to leverage best-practice quantitative methods to manage and drive the business. Exercises and cases complemented by perspectives and applications in finance, operations management, healthcare, the Internet, and other functions and industries. Restricted to Executive MBA students.

*Consult J. Hising DiFabio***15.732 Marketing Management**

Prereq: Permission of instructor

G (Fall)

3-0-6 units

Credit cannot also be received for 15.809, 15.812

Studies the application of a reasoned framework to the selection of target markets and the optimization of marketing decisions. Subject is divided into two parts: a tactical portion that reviews how firms optimize profits in their chosen markets, and a strategic portion that focuses on identifying target markets. Tactical topics include pricing, promotion, channel and product issues. Restricted to Executive MBA students.

*Consult J. Hising DiFabio***15.734 Introduction to Operations Management**

Prereq: Permission of instructor

G (Summer)

3-0-6 units

Credit cannot also be received for 15.761, 15.7611

Provides concepts, techniques and tools to design, analyze and improve core strategic operational capabilities. Covers a broad range of application domains and industries, such as high-tech, financial services, insurance, automotive, health care, retail, fashion, and manufacturing. Emphasizes the effects of uncertainty in business decision making and the interplay between strategic and financial objectives and operational capabilities. Students play simulation games that demonstrate some of the central concepts. Restricted to Executive MBA students.

*Consult J. Hising DiFabio***15.735 Product Design**

Prereq: None

G (IAP)

1-0-2 units

Presents the modern methods of product development using a systematic innovation approach. Topics include opportunity identification, design thinking, product strategy, identifying customer needs, creativity, concept development, product architecture, industrial design, and green design practice. Restricted to Executive MBA students.

*Consult J. Hising DiFabio***15.736 Introduction to System Dynamics**

Prereq: Permission of instructor

G (Summer)

3-0-6 units

Credit cannot also be received for 15.871

Introduces system dynamics modeling for the analysis of business policy and strategy. Provides the skills to visualize an organization in terms of the structures and policies that create dynamics and regulate performance. Uses causal mapping, simulation models, case studies, and management flight simulators to help develop principles of policy design for successful management of complex strategies. Considers the use of systems thinking to promote effective organizational learning. Restricted to Executive MBA students.

*Consult J. Lehrich***15.737 Advanced System Dynamics**

Prereq: 15.736 or permission of instructor

G (IAP)

3-0-0 units

Credit cannot also be received for 15.872

Workshops focus on two models: the dynamics of service quality within a firm; and industry dynamics (particularly investment cycles and bubbles), including the energy and housing markets. Emphasis on formulation, analysis, use, and decision-making. Develops modeling skills. Restricted to Executive MBA students.

Consult J. Hising DiFabio

15.738 Topics in Corporate Finance

Prereq: 15.724

G (IAP)

1-0-2 units

Case studies and lectures introduce financial tools needed to make value-enhancing business decisions. Topics drawn from issues such as advanced valuation analysis, capital structure decisions, debt restructuring, bankruptcy, incentive problems, real options, and valuation of international projects. Restricted to Executive MBA students.

Consult J. Hising DiFabio

15.739 Discovering Your Leadership Signature

Prereq: None

G (IAP)

1-0-2 units

Credit cannot also be received for 15.318

Helps students understand their unique way of leading, i.e., leadership signature. Provides tools for students to determine what kind of leader they are and how to tell their leadership story. Examines leadership identity, drawing on theory from leadership literature, family systems, developmental psychology, personality psychology, and organizational change. Also builds on the four capabilities (4-CAP) model. Includes case studies, reflection, video analysis, and storytelling. Restricted to Executive MBA students.

Consult J. Hising DiFabio

15.740 Strategic Communication for Executives

Prereq: None

G (IAP)

1-0-2 units

Develops communication skills crucial to successful management. Focuses on identifying a range of communication styles, and recognizing how to use them; dealing successfully with challenging or hostile audiences; understanding cross-cultural and global communication issues and differences; and leading and communicating in a crisis situation. Restricted to Executive MBA students.

Consult J. Hising DiFabio

Operations Management

15.761 Introduction to Operations Management

Prereq: 15.060, 6.041B, or permission of instructor

G (Fall, Spring, Summer)

4-0-5 units

Credit cannot also be received for 15.734, 15.7611

Imparts 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 among high-level financial objectives, operational capabilities, and people and organizational issues. Covers topics in capacity analysis, process design, process and business innovation, inventory management, risk pooling, supply chain coordination, sustainable operations, quality management, operational risk management, pricing and revenue management. Underscores how these topics are integrated with the different functions of the firm. Case studies and simulation games provide experience in applying central concepts and techniques to solve real-world business challenges. Meets with 15.7611 when offered concurrently. Expectations and evaluation criteria differ for students taking graduate version; consult syllabus or instructor for specific details. Summer section is primarily for Leaders for Global Operations students.

R. Levi, T. Zaman, K. Zheng

15.7611 Introduction to Operations Management

Prereq: 6.041B or permission of instructor

U (Spring)

4-0-5 units

Credit cannot also be received for 15.734, 15.761

Imparts 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 among high-level financial objectives, operational capabilities, and people and organizational issues. Covers topics in capacity analysis, process design, process and business innovation, inventory management, risk pooling, supply chain coordination, sustainable operations, quality management, operational risk management, pricing and revenue management. Underscores how these topics are integrated with the different functions of the firm. Case studies and simulation games provide experience in applying central concepts and techniques to solve real-world business challenges. Meets with 15.761 when offered concurrently. Expectations and evaluation criteria differ for students taking graduate version; consult syllabus or instructor for specific details.

T. Zaman, K. Zheng

15.762[J] Supply Chain Planning

Same subject as 1.273[J], IDS.735[J]

Prereq: 1.260[J] or 15.761

G (Spring)

2-0-4 units

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

15.763[J] Manufacturing System and Supply Chain Design

Same subject as 1.274[J], IDS.736[J]

Prereq: 1.260[J], 15.761, or 15.778

G (Spring)

2-0-4 units

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 trade-offs. 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

15.764[J] The Theory of Operations Management

Same subject as 1.271[J], IDS.250[J]

Prereq: 15.081[J] or 6.251[J], 6.436[J]; or permission of instructor

G (Spring)

3-0-9 units

Can be repeated for credit.

Provides mathematical foundations underlying the theory of operations management. Covers both classic and state-of-the-art results in various 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, principal-agent models and contract design, behavioral and experimental economics, algorithms and approximations, data-driven and learning models, and mechanism design. Also provides practical experience in how to apply the theoretical models to solve OM problems in business settings. Specific topics vary from year to year.

D. Simchi-Levi, N. Trichakis, K. Zheng

15.765[J] Global Supply Chain Management

Same subject as 1.265[J], 2.965[J], SCM.265[J]

Prereq: 1.260[J], 1.261[J], 15.761, 15.778, or permission of instructor

G (Spring)

2-0-4 units

Focuses on the planning, processes, and activities of supply chain management for companies involved in international commerce. Students examine the end-to-end processes and operational challenges in managing global supply chains, such as the basics of global trade, international transportation, duty, taxes, trade finance and hedging, currency issues, outsourcing, cultural differences, risks and security, and green supply chains issues. Highly interactive format features student-led discussions, staged debates, and a mock trial. Includes assignments on case studies and sourcing analysis, as well as projects and a final exam.

B. Arntzen

15.767 Healthcare Lab: Introduction to Healthcare Delivery in the United States

Subject meets with 15.777

Prereq: 15.060, 15.761; or permission of instructor

G (Fall)

4-0-5 units

Focuses on the current business challenges and opportunities to deliver high quality and reasonably priced health services. Provides students the opportunity to interact with speakers and many senior executives from the health industry. Topics include healthcare reform, systematic scheduling, retail clinics, telehealth, entrepreneurship, community health, etc. Discussions include practical examples from the ongoing healthcare-related work of Sloan faculty and projects with local hospitals. Provides a broad perspective on various career paths, such as consulting, entrepreneurship, hospital management, and IT innovation. Student teams work directly with a health organization on an applied project, which includes onsite work during SIP week. Students who choose our international projects or projects out of the Boston area will do their onsite project (register for 15.777) during IAP with permission of the instructor and organization; consult instructors 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 units

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. Fine, Z. Ton

15.769 Operations Strategy

Prereq: 15.761, 15.778, or permission of instructor

G (Fall, Spring)

3-0-6 units

Provides unifying 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.
T. Roemer, D. B. Rosenfield, Z. Ton

15.770[J] Logistics Systems

Same subject as 1.260[J], IDS.730[J], SCM.260[J]

Prereq: Permission of instructor

G (Fall)

3-0-9 units

See description under subject SCM.260[J].

Y. Sheffi, C. Caplice

15.771[J] Case Studies in Logistics and Supply Chain Management

Same subject as 1.261[J], SCM.261[J]

Prereq: Permission of instructor

G (Spring)

3-0-6 units

See description under subject SCM.261[J].

J. Byrnes

15.772[J] D-Lab: Supply Chains

Same subject as EC.733[J]

Prereq: None

U (Fall)

3-3-6 units

Introduces concepts of supply chain design and planning with a focus on supply chains for products destined to improve quality of life in developing countries. Topics include demand estimation, process analysis and improvement, facility location and capacity planning, inventory management, and supply chain coordination. Also covers issues specific to emerging markets, such as sustainable supply chains, choice of distribution channels, and how to account for the value-adding role of a supply chain. Students conduct D-Lab-based projects on supply chain design or improvement.
S. C. Graves

15.777 Healthcare Lab: Introduction to Healthcare Delivery in the United States

Subject meets with 15.767

Prereq: 15.060, 15.761

G (Fall, IAP)

4-0-11 units

Focuses on the current business challenges and opportunities to deliver high quality and reasonably priced health services. Provides students the opportunity to interact with speakers and many senior executives from the health industry. Topics include healthcare reform, systematic scheduling, retail clinics, telehealth, entrepreneurship, community health, etc. Discussions include practical examples from the ongoing healthcare-related work of Sloan faculty and projects with local hospitals. Provides a broad perspective on various career paths, such as consulting, entrepreneurship, hospital management, and IT innovation. Student teams work directly with a health organization on an applied project, which includes onsite work during SIP week. Students who choose our international projects or projects out of the Boston area will do their onsite project (register for 15.777) during IAP with permission of the instructor and organization; consult instructors for information.

R. Levi, J. Wilkinson

15.778 Introduction to Operations Management

Prereq: None

G (Summer)

3-0-6 units

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. Fine

15.780 Stochastic Models in Business Analytics

Prereq: 6.041B, 15.079, or permission of instructor

U (Fall)

3-0-9 units

Introduces core concepts in data-driven stochastic modeling that inform and optimize business decisions under uncertainty. Covers stochastic models and frameworks, such as queuing theory, time series forecasting, network models, dynamic programming, and stochastic optimization. Draws on real-world applications, with several examples from retail, healthcare, logistics, supply chain, social and online networks, and sports analytics.

R. Levi, K. Zheng

15.783[[Product Design and Development

Same subject as 2.739[[

Prereq: 2.009, 15.761, 15.778, 15.810, or permission of instructor

G (Spring)

3-3-6 units

Covers modern tools and methods for product design and development. Includes a cornerstone project in which teams conceive, design and prototype a physical product and/or service. Covers design thinking, product planning, identifying customer needs, concept generation, product architecture, industrial design, concept design, green design methods, and product management. Sloan students register via Sloan course bidding. Engineering students accepted via lottery based on WebSIS pre-registration.

S. Eppinger, M. C. Yang

15.784 Operations Laboratory

Prereq: None. *Coreq: 15.761*

G (Spring)

2-3-4 units

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, problem solving tools, 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. Rosenfield

15.785 Product Management (New)

Prereq: None

G (Spring; partial term)

2-0-4 units

Introduction to product management with an emphasis on its role within technology-driven enterprises. Topics include opportunity discovery, product-technology roadmapping, product development processes, go-to-market strategies, product launch, lifecycle management, and the central role of the product manager in each activity. Intended for students seeking a role in a product management team or for seeking to contribute to product management in a new enterprise.

Consult S. Eppinger

15.792[[] Global Operations Leadership Seminar

Same subject as 2.890[[], 10.792[[], 16.985[[]

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.

T. Roemer

15.794 Research Project in Operations

Prereq: Permission of instructor

G (Fall, IAP, Spring, Summer)

Units arranged

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.

T. Roemer

15.795 Behavioral Decision Theories and Applications

Prereq: Permission of instructor

Acad Year 2016-2017: G (Fall)

Acad Year 2017-2018: Not offered

3-0-9 units

Introduces fundamental behavioral theories of human decision making and demonstrates how they impact the design of management strategies and policies. Topics include prospect theory, reference-dependence preferences, loss aversion, ambiguity aversion, regret, inter-temporal preferences, social preferences, cognitive hierarchy, bounded rationality, and adaptive learning. Studies these concepts in a wide range of applications, including pricing, supply chain management, social welfare, marketing, contract design, sustainability, and e-commerce. Discusses experimental methodologies to identify and measure various preferences and phenomena, as well as mathematical models to capture them in decision making. Content updated from year to year to include state-of-the-art research.

K. Zheng

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 units

Credit cannot also be received for 15.732, 15.810, 15.812

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 units

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 and marketing analytics. 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.

*Consult J. R. Hauser, B. Wernerfelt***15.812 Marketing Management**

Prereq: None

U (Spring)

3-0-6 units

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; first half of term)

3-0-3 units

Credit cannot also be received for 15.726

Framework for understanding pricing strategies and analytics, with emphasis on entrepreneurial pricing. 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 (Spring; first half of term)

3-0-3 units

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 methods, voice of the customer, focus groups, and analyses suitable for qualitative data. Introduces new information-gathering methods in development at MIT.

*D. Prelec***15.822 Strategic Market Measurement**

Prereq: None

G (Spring; second half of term)

3-0-3 units

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 Product Management**

Prereq: None

G (Spring)

3-1-5 units

Practical introduction to the process of product management. Provides opportunities for experiential learning through projects with companies and organizations. Exposes students to state-of-the-art frameworks and tools that bring to market elegant and efficient solutions to strong customer needs. Covers the major phases of product management: opportunity identification (observational research, qualitative interviews, ideation, and open innovation), design (segmentation and positioning, voice of customers, questionnaire designs, and conjoint analysis), testing (concept testing, pre-market forecasting, A/B testing, and design of experiments), and launch (search engineer and social media campaigns).

Staff

15.830 Enterprise Management Lab

Prereq: None. Coreq: 15.810, 15.761, or 15.900

G (Fall, IAP)

3-0-3 units

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 units

Applies marketing concepts, analyses and tools used in business-to-business (B2B) marketing. Develops an understanding of customer value management as a strategy for delivering superior value to targeted business segments while maintaining equitable returns. Focuses on B2B pricing, 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, and domestic and global markets. Emphasizes applications in technology and healthcare domains. Includes value-based pricing project, case studies, applied exercises, and readings.

S. Chatterjee

15.834 Marketing Strategy

Prereq: None

G (Spring; first half of term)

3-0-3 units

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

Acad Year 2016-2017: Not offered

Acad Year 2017-2018: G (Spring; second half of term)

3-0-3 units

Provides foundational knowledge necessary to start and run a business. Discusses basic marketing theory as it applies to entrepreneurial firms. Includes guest speakers and final project.

B. Wernerfelt

15.838 Research Seminar in Marketing

Prereq: 15.810

G (Fall, Spring)

3-0-6 units

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: 15.810

G (Fall, Spring)

Units arranged

Can be repeated for credit.

Group study of current topics related to marketing.

Staff

15.846 Branding

Prereq: 15.810

G (Spring; second half of term)

3-0-3 units

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: 15.810

G (Spring)

3-0-6 units

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.

*Staff***System Dynamics****15.871 Introduction to System Dynamics**

Prereq: Permission of instructor

G (Fall, Spring; first half of term)

3-0-3 units

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. Meets with 15.8741 first half of term when offered concurrently. Expectations and evaluation criteria differ for students taking half-term graduate version; consult syllabus or instructor for specific details.

*D. Keith, H. Rahmandad, N. Repenning, J. Serman***15.872 System Dynamics II**

Prereq: 15.871

G (Fall, Spring; second half of term)

3-0-3 units

Credit cannot also be received for 15.737

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. Meets with 15.8741 second half of term when offered concurrently. Expectations and evaluation criteria differ for students taking half-term graduate version; consult syllabus or instructor for specific details.

*J. D. Serman, H. Rahmandad, D. Keith***15.8741 System Dynamics for Business Policy**

Prereq: None

U (Fall, Spring)

3-0-9 units

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 cover successful applications of system dynamics in growth strategy, management of technology, operations, supply chains, product development, and other areas. When offered concurrently, meets with 15.871 first half of term and with 15.872 second half of term. Expectations and evaluation criteria differ for students taking the half-term graduate subjects; consult syllabus or instructor for specific details.

*J. Serman, H. Rahmandad, D. Keith***15.875 Applications of System Dynamics**

Prereq: 15.872

G (Spring)

3-0-6 units

Can be repeated for credit.

Explores how system dynamics can help organizations achieve important goals. Student teams 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.

Consult J. D. Serman

15.878 Capstone Seminar in Sustainability

Prereq: 15.913

G (Spring; second half of term)

3-0-3 units

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.

M. Amengual

15.879 Research Seminar in System Dynamics

Prereq: 15.872 and permission of instructor

G (Spring)

3-0-9 units

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 D. Keith, J. Sterman

Strategic Management

15.900 Competitive Strategy

Prereq: None

G (Fall, Spring)

3-0-6 units

Credit cannot also be received for 15.9001

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. Students taking graduate version complete additional assignments. Meets with 15.9001 when offered concurrently.

D. Sull, N. Thompson, A. Kacperczyk

15.9001 Competitive Strategy

Prereq: None

U (Spring)

3-0-6 units

Credit cannot also be received for 15.900

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. Students taking graduate version complete additional assignments. Meets with 15.900 when offered concurrently.

D. Sull, N. Thompson, A. Kacperczyk

15.902 Competitive Strategy

Prereq: Permission of instructor

G (Spring; first half of term)

2-0-4 units

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

15.903 Managing the Modern Organization: Organizational Economics and Corporate Strategy

Prereq: 15.010 or 15.311

G (Spring; first half of term)

3-0-3 units

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 (Spring; second half of term)

3-0-3 units

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**

Prereq: None

G (Spring)

3-0-9 units

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.

*J. Utterback***15.910 Innovation Strategy**

Prereq: None

G (Spring; first half of term)

3-0-3 units

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.

*B. Roin***15.911 Entrepreneurial Strategy**

Prereq: None

G (Spring; second half of term)

4-0-2 units

Provides a deep understanding of the core strategic choices facing start-up innovators, as well as a synthetic framework for the development and implementation of entrepreneurial strategy in dynamic environments. Identifies the key choices entrepreneurs make to take advantage of opportunity and the logic of particular strategic commitments that allow entrepreneurs to establish competitive advantage.

*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 units

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.

*Staff***15.913 Strategies for Sustainable Business**

Prereq: None

G (Spring; first half of term)

3-0-3 units

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.

M. Amengual, J. Jay, J. 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 units

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 units

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 semester. 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.

M. Amengual, J. Jay, J. Sterman

15.928 The Sociology of Strategy

Prereq: 15.342
 Acad Year 2016-2017: Not offered
 Acad Year 2017-2018: G (Spring)
 3-0-9 units

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

Prereq: 15.342
 G (Spring)
 3-0-9 units

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 units

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

15.941[] Leadership in Real Estate

Same subject as 11.430[]
 Prereq: None
 G (Fall; first half of term)
 3-0-3 units

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: None

G (Fall)

Units arranged

Can be repeated for credit.

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

Consult E. Zuckerman

Special Subjects**15.S01 Special Seminar in Management**

Prereq: Permission of instructor

G (Fall, Spring, Summer)

Units arranged

Can be repeated for credit.

undefined

15.S02 Special Seminar in Management

Prereq: Permission of instructor

G (Fall, IAP, Spring)

Units arranged

Can be repeated for credit.

undefined

15.S03 Special Seminar in Management

Prereq: Permission of instructor

G (Fall, IAP, Spring, Summer)

Units arranged

Can be repeated for credit.

undefined

15.S04 Special Seminar in Management

Prereq: Permission of instructor

G (Fall, IAP, Spring, Summer)

Units arranged

Can be repeated for credit.

undefined

15.S05 Special Seminar in Management

Prereq: Permission of instructor

G (Fall, IAP, Spring, Summer; second half of term)

Units arranged

Can be repeated for credit.

undefined

15.S06 Special Seminar in Management

Prereq: Permission of instructor

G (Fall, IAP, Spring, Summer; first half of term)

Units arranged

Can be repeated for credit.

undefined

15.S07 Special Seminar in Management

Prereq: Permission of instructor

G (Fall, IAP, Spring, Summer; second half of term)

Units arranged

Can be repeated for credit.

undefined

15.S08 Special Seminar in Management

Prereq: Permission of instructor

G (Fall, IAP, Spring, Summer; second half of term)

Units arranged

Can be repeated for credit.

undefined

*Staff***15.S09 Special Seminar in Management**

Prereq: Permission of instructor

G (Fall, Spring)

Units arranged

Can be repeated for credit.

undefined

15.S10-15.S12 Special Seminar in Management

Prereq: Permission of instructor

G (Fall, IAP, Summer; second half of term)

Units arranged

Can be repeated for credit.

undefined

15.S13, 15.S14 Special Seminar in Management

Prereq: Permission of instructor

G (Fall, IAP, Summer; first half of term)

Units arranged

Can be repeated for credit.

undefined

15.S15, 15.S16 Special Seminar in Management

Prereq: Permission of instructor

G (Fall, IAP, Spring)

Units arranged

Can be repeated for credit.

undefined

15.S17 Special Seminar in Management

Prereq: Permission of instructor

G (Fall, Spring, Summer)

Units arranged

Can be repeated for credit.

undefined

15.S18, 15.S19 Special Seminar in Management

Prereq: Permission of instructor

G (Fall, IAP, Spring, Summer)

Units arranged

Can be repeated for credit.

undefined

15.S20-15.S26 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

G (Spring, Summer)

Units arranged

Can be repeated for credit.

undefined

15.S35-15.S38 Special Distance Learning Seminar in Management

Prereq: None

G (Fall, IAP, Spring, Summer)

Units arranged [P/D/F]

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

U (IAP)

Units arranged [P/D/F]

Can be repeated for credit.

undefined

15.S42-15.S47 Special Seminar in Management

Prereq: None

U (Fall, IAP, Spring)

Units arranged

Can be repeated for credit.

undefined

15.S50-15.S54 Special Seminar in Management

Prereq: Permission of instructor

G (Fall, IAP)

Units arranged [P/D/F]

Can be repeated for credit.

undefined

15.S55-15.S59 Special Seminar in Management

Prereq: Permission of instructor

G (IAP)

Units arranged [P/D/F]

Can be repeated for credit.

undefined

15.S60-15.S65 Special Seminar in Management

Prereq: Permission of instructor

G (Fall, IAP, Spring, Summer)

Units arranged [P/D/F]

Can be repeated for credit.

undefined

15.S66-15.S69 Special Seminar in Management

Prereq: Permission of instructor

G (Spring)

Units arranged

Can be repeated for credit.

undefined

15.S70-15.S75 Special Seminar in Management

Prereq: Permission of instructor

G (Fall, IAP, Spring)

Units arranged

Can be repeated for credit.

Group study of current topics related to management not otherwise included in curriculum.

Consult Sloan Educational Services

Thesis, Research, and Practice**15.UR Undergraduate Research in Management**

Prereq: None

U (Fall, IAP, Spring, Summer)

Units arranged [P/D/F]

Can be repeated for credit.

undefined

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.

undefined

15.951 Independent Study in Management

Prereq: None

U (Fall, IAP, Spring, Summer)

Units arranged

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 units

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]

Can be repeated for credit.

undefined

15.961 Independent Study in Management

Prereq: Permission of instructor

G (Fall, IAP, Spring, Summer)

Units arranged

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

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

15.998 Independent Group Study in Action Learning

Prereq: None

G (Fall, IAP, Spring, Summer)

Units arranged

Team-based opportunities for application management tools, under faculty supervision, on dynamic projects that provide a wide array of operational challenges facing organizations around the world. May include travel to on-site locales. Projects require prior approval, as well as a written proposal and a final report.

Consult T. Walor

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

Can be repeated for credit.

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

Consult Sloan Educational Services