MANAGEMENT (COURSE 15)

Summer Session Representative
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Current MIT students can take arranged-unit subjects such as UROP, Special Studies, Graduate Thesis during the Summer Session by prior arrangement with a faculty member.

The following pre-thesis research subject has subsidized tuition: 15.961 Independent Study in Management. See Tuition (http://catalog.mit.edu/summer/tuition-financial-aid) for details of the policy concerning these subjects.

In addition, a select number of subjects are offered, but restricted, to students enrolled in the Leaders for Global Operations Program, Master of Finance, and MIT Sloan Fellows in Innovation and Global Leadership. Other interested current MIT students may consult the instructor.

Managerial Economics

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. Summer: Section A: R. Gibbons, T. Suri; Section B: R. Gibbons, T. Suri

Operations Research/Statistics

15.060 Data, Models, and Decisions
Prereq: Permission of instructor
G (Fall, Summer)
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. Summer: Section A: D. Gamarnik; Section B: D. Gamarnik

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. Summer: L. Yedidsion

15.086 Engineering Probability
Prereq: Calculus I (GIR), permission of instructor
G (Summer; first half of term)
2-0-4 units

Introduction to Applied Probability. Makes real-life problems central to the pedagogy and aims for an intuitive understanding of Probability as well as mastery of key probabilistic concepts and methods. Summer: A. Barnett

15.087 Engineering Statistics and Data Science
Prereq: Calculus II (GIR), 15.086, 18.06, permission of instructor
G (Summer; second half of term)
2-0-4 units

Modeling and analysis of uncertainty and variation. Covers 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 R or MATLAB. Summer: TBD

15.089 Analytics Capstone
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. Summer: D. Bertsimas
**Work and Organizational Studies**

**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.  
*Summer: J. Carroll*

**15.317 Leadership and Organizational Change**  
Prereq: None  
G (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.  
*Summer: L. Hafrey*

**Finance**

**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.  
*Summer: Section A: N. Bergman, D. Lucas; Section B: N. Bergman, D. Lucas*

**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.  
*Summer: Section A: L. Kogan; Section B: J. Wang*

**Accounting**

**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).  
*Summer: Section A: S. Kothari; Section B: S. Kothari*
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.
*Summer: Section A: J. Cohen; Section B: E. So*

**Executive MBA Subjects**

15.705 Organizations Lab
Prereq: Permission of instructor; 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.
*Summer: D. Kieffer, N. Repenning*

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.
*Summer: Section A: H. Gregersen; Section B: H. Gregersen*

15.734 Introduction to Operations Management
Prereq: Permission of instructor
G (Spring, 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.
*Summer: Section A: S. Gavirneni; Section B: S. Gavirneni*

15.736 Introduction to System Dynamics
Prereq: Permission of instructor
G (Spring, 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.
*Summer: Section A: N. Repenning, J. Sterman; Section B: N. Repenning, J. Sterman*
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 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 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: J. Jonasson

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.
Summer: Section A: V. Farias; Section B: V. Farias

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.
Summer: Section A: D. Simester; Section B: D. Simester

Special Subjects

15.S05 Special Seminar in Management: Lean Tools Workshop
Prereq: Permission of instructor
G (Fall, IAP, Spring, Summer; second half of term)
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.
Summer: A. Weigel

15.S06 Special Seminar in Management: High Velocity Systems
Prereq: Permission of instructor
G (Fall, IAP, Spring, Summer; second half of term)
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.
Summer: S. Spear

15.S17 Special Seminar in Management: Advanced Financial Mathematics
Prereq: Permission of instructor
G (Fall, Spring, Summer)
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.
Summer: P. Mende
15.S21 Special Seminar in Management: Introduction to the Three Pillars of the Sloan Fellows Program
Prereq: Permission of instructor
G (IAP, Spring, Summer)
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.

*Summer: Section A: D. Ancona, S. Johnson, R. Reagans, S. Stern*

*Section B: D. Ancona, S. Johnson, R. Reagans, S. Stern*

Prereq: Permission of instructor
G (IAP, Spring, Summer)
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.

*Summer: P. Mende*