DATA, SYSTEMS, AND SOCIETY (IDS)

IDS.012[J] Statistics, Computation and Applications
Same subject as 6.419[J]
Subject meets with 6.439[J], IDS.131[J]
Prereq: ((2.087, 6.0002, 6.01, 18.03, or 18.06) and (6.008, 6.041, 14.30, 16.09, or 18.05)) or permission of instructor
U (Fall)
3-1-8 units

Hands-on analysis of data demonstrates the interplay between statistics and computation. Includes four modules, each centered on a specific data set, and introduced by a domain expert. Provides instruction in specific, relevant analysis methods and corresponding algorithmic aspects. Potential modules may include medical data, gene regulation, social networks, finance data (time series), traffic, transportation, weather forecasting, policy, or industrial applications. Projects address a large-scale data analysis question. Students taking graduate version complete additional assignments. Enrollment limited; priority to Statistics and Data Science minors, and to juniors and seniors.

C. Uhler, S. Jegelka

IDS.013[J] Statistical Thinking and Data Analysis
Same subject as 15.075[J]
Prereq: 6.041B or 15.0791
U (Spring)
3-1-8 units. Institute LAB
Credit cannot also be received for 18.650[J], 18.6501, IDS.014[J]

See description under subject 15.075[J].
R. Mazumder

IDS.014[J] Fundamentals of Statistics
Same subject as 18.650[J]
Subject meets with 18.6501
Prereq: 6.041 or 18.600
U (Fall, Spring)
4-0-8 units
Credit cannot also be received for 15.075[J], IDS.013[J]

See description under subject 18.650[J].
E. Mossel

IDS.045[J] System Safety
Same subject as 16.63[J]
Prereq: None
U (Fall)
Not offered regularly; consult department
3-0-9 units. REST

See description under subject 16.63[J].
N. Leveson

IDS.055[J] Science, Technology, and Public Policy
Same subject as 17.309[J], STS.082[J]
Prereq: None
U (Spring)
4-0-8 units. HASS-S; CI-H
Credit cannot also be received for 17.310[J], IDS.412[J], STS.482[J]

See description under subject 17.309[J].
K. Oye, N. Selin

IDS.060[J] Environmental Law, Policy, and Economics: Pollution Prevention and Control
Same subject as 1.801[J], 11.021[J], 17.393[J]
Subject meets with 1.811[J], 11.630[J], 15.663[J], IDS.540[J]
Prereq: None
U (Spring)
3-0-9 units. HASS-S

Reviews and analyzes federal and state regulation of air and water pollution, hazardous waste, green-house gas emissions, and the production and use of toxic chemicals. Analyzes pollution as an economic problem and the failure of markets. Explores the role of science and economics in legal decisions. Emphasizes use of legal mechanisms and alternative approaches (such as economic incentives and voluntary approaches) to control pollution and encourage chemical accident and pollution prevention. Focuses on the major federal legislation, the underlying administrative system, and the common law in analyzing environmental policy, economic consequences, and the role of the courts. Discusses classical pollutants and toxic industrial chemicals, green-house gas emissions, community right-to-know, and environmental justice. Develops basic legal skills: how to read/understand cases, regulations, and statutes. Students taking graduate version are expected to explore the subject in greater depth.

N. Ashford, C. Caldart
IDS.061[J] Regulation of Chemicals, Radiation, and Biotechnology
Same subject as 1.802[J], 11.022[J]
Subject meets with 1.812[J], 10.805[J], 11.631[J], IDS.436[J], IDS.541[J]
Prereq: IDS.060[J] or permission of instructor
U (Spring)
Not offered regularly; consult department
3-0-9 units
Focuses on policy design and evaluation in the regulation of hazardous substances and processes. Includes risk assessment, industrial chemicals, pesticides, food contaminants, pharmaceuticals, radiation and radioactive wastes, product safety, workplace hazards, indoor air pollution, biotechnology, victims' compensation, and administrative law. Health and economic consequences of regulation, as well as its potential to spur technological change, are discussed for each regulatory regime. Students taking the graduate version are expected to explore the subject in greater depth.
N. Ashford, C. Caldart

IDS.062[J] Global Environmental Negotiations
Same subject as 12.346[J]
Subject meets with 12.846[J], IDS.525[J]
Prereq: Permission of instructor
U (Fall)
Not offered regularly; consult department
2-0-4 units
Practical introduction to global environmental negotiations designed for science and engineering students. Covers basic issues in international negotiations, such as North-South conflict, implementation and compliance, trade, and historical perspective on global environmental treaties. Offers hands-on practice in developing and interpreting international agreements through role-play simulations and observation of ongoing climate change negotiating processes. Students taking graduate version complete additional assignments.
N. E. Selin

IDS.063[J] People and the Planet: Environmental Governance and Science
Same subject as 12.387[J], 15.874[J]
Prereq: None
U (Fall)
3-0-6 units
See description under subject 12.387[J].
N. Selin, S. Solomon, J. Sterman

IDS.064 Engineering, Economics and Regulation of the Electric Power Sector
Subject meets with 6.695[J], 15.032[J], IDS.505[J]
Prereq: 14.01, 22.081[J], IDS.060[J], or permission of instructor
U (Spring)
3-0-9 units
Provides an in-depth and interdisciplinary look at electric power systems, focusing on regulation as the link among engineering, economic, legal, and environmental viewpoints. Topics include electricity markets, incentive regulation of network utilities, retail competition, tariff design, distributed generation, rural electrification, multinational electricity markets, environmental impacts, and the future of utilities and strategic sustainability issues under both traditional and competitive regulatory frameworks. Background in policy, microeconomics, or engineering desirable. Students taking graduate version complete additional assignments.
I. Perez-Arriaga

IDS.131[J] Statistics, Computation and Applications
Same subject as 6.439[J]
Subject meets with 6.419[J], IDS.012[J]
Prereq: ((2.087, 6.0002, 6.01, 18.03, or 18.06) and (6.008, 6.041, 14.30, 16.09, or 18.05)) or permission of instructor
G (Fall)
3-1-8 units
Hands-on analysis of data demonstrates the interplay between statistics and computation. Includes four modules, each centered on a specific data set, and introduced by a domain expert. Provides instruction in specific, relevant analysis methods and corresponding algorithmic aspects. Potential modules may include medical data, gene regulation, social networks, finance data (time series), traffic, transportation, weather forecasting, policy, or industrial web applications. Projects address a large-scale data analysis question. Students taking graduate version complete additional assignments. Limited enrollment; priority to Statistics and Data Science minors and to juniors and seniors.
C. Uhler, S. Jegelka
Same subject as 6.244[J]
Prereq: 6.431 and 18.06
Acad Year 2021-2022: G (Spring)
Acad Year 2022-2023: Not offered
3-0-9 units

Provides instruction in the geometric, algebraic and combinatorial perspective on graphical models. Presents methods for learning the underlying graph and inferring its parameters. Topics include exponential families, duality theory, conic duality, polyhedral geometry, undirected graphical models, Bayesian networks, Markov properties, total positivity of distributions, hidden variables, and tensor decompositions.
C. Uhler

IDS.145[J] Data Mining: Finding the Models and Predictions that Create Value
Same subject as 15.062[J]
Subject meets with 15.0621
Prereq: 15.060, 15.075[J], or permission of instructor
G (Fall; second half of term)
2-0-4 units

See description under subject 15.062[J].
R. E. Welsch

IDS.147[J] Statistical Machine Learning and Data Science
Same subject as 15.077[J]
Prereq: Permission of instructor
G (Spring)
4-0-8 units

See description under subject 15.077[J].
R. E. Welsch

Same subject as 9.521[J], 18.656[J]
Prereq: (6.436[J], 18.06, and 18.6501) or permission of instructor
G (Spring)
3-0-9 units

See description under subject 9.521[J].
S. Rakhlin, P. Rigollet

IDS.190 Doctoral Seminar in Statistics and Data Science
Prereq: None
G (Fall)
1-0-2 units

Interdisciplinary seminar explores diverse topics in statistics and data science. Restricted to students in the Interdisciplinary Doctoral Program in Statistics.
Consult D. Shah

IDS.200[J] Optimization Methods
Same subject as 6.255[J], 15.093[J]
Subject meets with 6.215
Prereq: 18.06
G (Fall)
4-0-8 units

See description under subject 15.093[J].
D. Bertsimas, P. Parrilo

Same subject as 1.271[J], 15.764[J]
Prereq: (6.436[J] and (6.251[J] or 6.251[J])) or permission of instructor
G (Spring)
3-0-9 units
Can be repeated for credit.

See description under subject 15.764[J].
D. Simchi-Levi, N. Trichakis, K. Zheng

IDS.305[J] Business and Operations Analytics
Same subject as 1.275[J]
Prereq: Permission of instructor
G (Spring; first half of term)
2-0-4 units

Provides instruction on identifying, evaluating, and capturing business analytics opportunities that create value. Also provides basic instruction in analytics methods and case study analysis of organizations that successfully deployed these techniques.
D. Simchi-Levi
IDS.330 Real Options for Product and Systems Design
Prereq: IDS.333 or permission of instructor
G (Spring; second half of term)
3-0-3 units
Focuses on implementation of flexibility (real options) in the design
of products and systems. Applies the methods presented in IDS.333:
recognition of uncertainty, identification of best opportunities
for flexibility, and valuation of these options and their effective
implementation. Students’ work culminates in a dynamic business
plan for design and deployment of products, start-ups, ongoing
management of operations, or policy plans. Students bring their
own project concept, which they will analyze during the class. Useful
complement to thesis or research projects.
R. de Neufville

IDS.332 Engineering Systems Analysis for Design
Engineering School-Wide Elective Subject.
Offered under: 1.146, 16.861, IDS.332
Prereq: Permission of instructor
G (Fall)
3-0-9 units
Credit cannot also be received for IDS.333
Practical-oriented subject that builds upon theory and methods and
culminates in extended application. Covers methods to identify,
value, and implement flexibility in design (real options). Topics
include definition of uncertainties, simulation of performance for
scenarios, screening models to identify desirable flexibility, decision
analysis, and multidimensional economic evaluation. Students
demonstrate proficiency through an extended application to a
system design of their choice. Complements research or thesis
projects. Meets with IDS.333 first half of term. Enrollment limited.
R. de Neufville

IDS.333 Risk and Decision Analysis
Prereq: None
G (Fall; first half of term)
3-0-3 units
Credit cannot also be received for 1.146, 16.861, IDS.332
Focuses on design choices and decisions under uncertainty.
Topics include identification and description of uncertainties
using probability distributions; the calculation of commensurate
measures of value, such as expected net present values; Monte Carlo
simulation and risk analysis; and the use of decision analysis to
explore alternative strategies and identify optimal initial choices.
Presents applied analysis of practical examples from a variety of
engineering systems using spreadsheet and decision analysis
software. Meets with IDS.332 first half of term.
R. de Neufville

IDS.336[J] Systems Architecting Applied to Enterprises
Same subject as 16.855[J]
Prereq: Permission of instructor
G (Spring)
3-0-9 units
Focuses on principles and practices for architecting new and
evolving sociotechnical enterprises. Includes reading and
discussions of enterprise theory, contemporary challenges, and case
studies of evolving enterprises. Covers frameworks and methods for
ecosystem analysis, stakeholder analysis, architecture design and
evaluation, and implementation strategies. Students work in small
teams on projects to design a future architecture for a selected real
world enterprise.
D. Rhodes

IDS.337[J] Aerospace Biomedical and Life Support Engineering
Same subject as 16.423[J], HST.515[J]
Prereq: 16.06, 16.400, or permission of instructor
Acad Year 2021-2022: G (Fall)
Acad Year 2022-2023: Not offered
3-0-9 units
See description under subject 16.423[J].
D. J. Newman

IDS.338[J] Multidisciplinary Design Optimization
Same subject as 16.888[J], EM.428[J]
Prereq: 18.085 or permission of instructor
G (Spring)
3-1-8 units
See description under subject 16.888[J].
O. de Weck

IDS.339[J] Space Systems Engineering
Same subject as 16.89[J]
Prereq: 16.851 or permission of instructor
G (Spring)
4-2-6 units
See description under subject 16.89[J].
E. F. Crawley, O. de Weck, J. A. Hoffman

IDS.340[J] System Safety Concepts
Same subject as 16.863[J]
Prereq: Permission of instructor
G (Fall)
3-0-9 units
See description under subject 16.863[J]. Enrollment may be limited.
N. G. Leveson
IDS.341[J] Concepts in the Engineering of Software
Same subject as 16.355[J]
Prereq: Permission of instructor
G (Spring)
3-0-9 units
See description under subject 16.355[J]. Enrollment may be limited.
N. G. Leveson

IDS.345[J] Digital Evolution: Managing Web 3.0
Same subject as 15.565[J]
Prereq: Permission of instructor
G (Fall)
Not offered regularly; consult department
3-0-6 units
See description under subject 15.565[J].
S. Madnick

IDS.410 Modeling and Assessment for Policy
Prereq: None
G (Fall)
Not offered regularly; consult department
3-0-6 units
Explores how scientific information and quantitative models can be used to inform policy decision-making. Develops an understanding of quantitative modeling techniques and their role in the policy process through case studies and interactive activities. Addresses issues such as analysis of scientific assessment processes, uses of integrated assessment models, public perception of quantitative information, methods for dealing with uncertainties, and design choices in building policy-relevant models. Examples focus on models and information used in Earth system governance.
N. E. Selin

IDS.411 Concepts and Research in Technology and Policy
Prereq: Permission of instructor
G (Fall)
3-0-6 units
Core integrative subject, with substantive participation from a series of guest faculty lecturers, examines key technology-policy concepts. Explores alternative framings of roles of technology in policy, emphasizing the implications of these alternatives upon problem-solving in the area. Exercises prepare students to apply these concepts in the framing of their thesis research. Preference to first-year students in the Technology and Policy Program.
F. Field

IDS.412[J] Science, Technology, and Public Policy
Same subject as 17.310[J], STS.482[J]
Prereq: Permission of instructor
G (Spring)
4-0-8 units
Credit cannot also be received for 17.309[J], IDS.055[J], STS.082[J]
See description under subject 17.310[J].
K. Oye, N. Selin

IDS.435[J] Law, Technology, and Public Policy
Same subject as 15.655[J]
Prereq: None
G (Fall)
3-0-9 units
Examines how law, economics, and technological change shape public policy, and how law can be used to influence technological change; how the legal system responds to environmental, safety, energy, social, and ethical problems; how law and markets interact to limit or encourage technological development; and how law can affect wealth distribution, employment, and social justice. Covers energy/climate change; genetic engineering; telecommunications and the role of misinformation; industrial automation; the effect of health, safety, and environmental regulation on technological innovation; the impacts of intellectual property law on innovation and equity; pharmaceuticals; nanotechnology; cost/benefit analysis as a decision tool; public participation in governmental decisions affecting science and technology; corporate influence on technology and welfare; and law and economics as competing paradigms to encourage sustainability. Permission of instructor required for freshmen and sophomores.
N. Ashford, C. Caldart

Same subject as 10.805[J]
Subject meets with 1.802[J], 1.812[J], 11.022[J], 11.631[J], IDS.061[J], IDS.541[J]
Prereq: Permission of instructor
G (Spring)
Not offered regularly; consult department
3-0-6 units
Addresses relationship between technology-related problems and the law applicable to work environment. National Labor Relations Act, Occupational Safety and Health Act. Toxic Substances Control Act, state worker’s compensation, and suits by workers in the courts discussed. Problems related to occupational health and safety, collective bargaining as a mechanism for altering technology in the workplace, job alienation, productivity, and the organization of work addressed. Prior courses or experience in the environmental, public health, or law-related areas.
N. A. Ashford, C. Caldart
**IDS.437[J] Technology, Globalization, and Sustainable Development**
Same subject as 1.813[J], 11.466[J], 15.657[J]
Prereq: Permission of instructor
G (Fall)
3-0-9 units

Investigates sustainable development, taking a broad view to include not only a healthy economic base, but also a sound environment, stable employment, adequate purchasing power and earning capacity, distributional equity, national self-reliance, and maintenance of cultural integrity. Explores national, multinational, and international political and legal mechanisms to further sustainable development through transformation of the industrial state. Addresses the importance of technological innovation and the financial crisis of 2008 and the emergence of the Covid-19 pandemic, as well as governmental interventions to reduce inequality.

*N. Ashford*

**IDS.449 Technology Policy Internship and Professional Perspectives Seminar**
Prereq: IDS.411 or permission of instructor
G (Fall, Spring)
1-1-1 units

Can be repeated for credit.

Seminar examines what technology policy is in practice. Considers the question of “Who achieves what, when, how, and why?” regarding technology and policy. Students who completed summer internships present and dissect their experiences with special reference to specific cases in which they participated. Develops perspectives on practice in the field through sessions with alumni, other practitioners, and development professionals within MIT.

*Staff*

**IDS.505[J] Engineering, Economics and Regulation of the Electric Power Sector**
Same subject as 6.695[J], 15.032[J]
Subject meets with IDS.064
Prereq: 14.01, 22.081[J], IDS.060[J], or permission of instructor
G (Spring)
3-0-9 units

Provides an in-depth and interdisciplinary look at electric power systems, focusing on regulation as the link among engineering, economic, legal, and environmental viewpoints. Topics include electricity markets, incentive regulation of network utilities, retail competition, tariff design, distributed generation, rural electrification, multinational electricity markets, environmental impacts, and the future of utilities and strategic sustainability issues under both traditional and competitive regulatory frameworks. Background in policy, microeconomics, or engineering desirable. Students taking graduate version complete additional assignments.

*I. Perez-Arriaga*

**IDS.521 Energy Systems and Climate Change Mitigation**
Prereq: Permission of instructor
G (Spring)
3-0-9 units

Reviews the contributions of energy systems to global greenhouse gas emissions, and the levers for reducing those emissions. Lectures and projects focus on evaluating energy systems against climate policy goals, using performance metrics such as cost, carbon intensity, and others. Student projects explore pathways for realizing emissions reduction scenarios. Projects address the climate change mitigation potential of energy technologies, technological and behavioral change trajectories, and technology and policy portfolios.

*J. Trancik*
IDS.522 Mapping and Evaluating New Energy Technologies
Prereq: Permission of instructor
G (Spring)
3-0-9 units
Project-based seminar covers recent developments in energy conversion and storage technologies. Merits of alternative technologies are debated based on their environmental performance and cost, and their potential improvement and scalability. Project teams develop quantitative models and interactive visualization tools to inform the future development of these technologies. Models may probe how the impact of a technology depends on assumptions about future advancements in materials or device design. Other projects may develop models for rational design choices (the selection of a particular material or processing technique) based on economic and environmental performance and physical constraints.

J. Trancik

IDS.524[J] People and the Planet: Environmental Histories and Engineering
Same subject as 11.204[J]
Subject meets with 11.004[J], STS.033[J]
Prereq: None
G (Spring)
Not offered regularly; consult department
3-3-6 units
See description under subject 11.204[J].
A. Slocum, R. Scheffler, J. Trancik

IDS.525[J] Global Environmental Negotiations
Same subject as 12.846[J]
Subject meets with 12.346[J], IDS.062[J]
Prereq: None
G (Fall)
Not offered regularly; consult department
2-0-4 units
Practical introduction to global environmental negotiations designed for science and engineering students. Covers basic issues in international negotiations, such as North-South conflict, implementation and compliance, trade, and historical perspective on global environmental treaties. Offers hands-on practice in developing and interpreting international agreements through role-play simulations and observation of ongoing climate change negotiating processes. Students taking graduate version complete additional assignments.

N. Selin

IDS.526[J] Sustainability Science and Engineering
Same subject as 12.845[J]
Prereq: None
G (Fall)
Not offered regularly; consult department
3-0-6 units
Introduces and develops core ideas and concepts in the field of sustainability science and engineering from an engineering systems perspective. Takes an interdisciplinary approach to discuss case studies of sustainability systems research. Exposes students to techniques for sustainability research across engineering, natural and social science disciplines. Term projects focus on applying techniques.

N. E. Selin

IDS.540[J] Environmental Law, Policy, and Economics: Pollution Prevention and Control
Same subject as 1.811[J], 11.630[J], 15.663[J]
Subject meets with 1.801[J], 11.021[J], 17.393[J], IDS.060[J]
Prereq: None
G (Spring)
3-0-9 units
Reviews and analyzes federal and state regulation of air and water pollution, hazardous waste, green-house gas emissions, and the production and use of toxic chemicals. Analyzes pollution as an economic problem and the failure of markets. Explores the role of science and economics in legal decisions. Emphasizes use of legal mechanisms and alternative approaches (such as economic incentives and voluntary approaches) to control pollution and encourage chemical accident and pollution prevention. Focuses on the major federal legislation, the underlying administrative system, and the common law in analyzing environmental policy, economic consequences, and the role of the courts. Discusses classical pollutants and toxic industrial chemicals, green-house gas emissions, community right-to-know, and environmental justice. Develops basic legal skills: how to read/understand cases, regulations, and statutes. Students taking graduate version are expected to explore the subject in greater depth.

N. Ashford, C. Caldart
**IDS.541[J] Regulation of Chemicals, Radiation, and Biotechnology**  
Same subject as 1.812[J], 11.631[J]  
Subject meets with 1.802[J], 10.805[J], 11.022[J], IDS.061[J], IDS.436[J]  
Prereq: IDS.540[J] or permission of instructor  
G (Spring)  
Not offered regularly; consult department  
3-0-9 units  
Focuses on policy design and evaluation in the regulation of hazardous substances and processes. Includes risk assessment, industrial chemicals, pesticides, food contaminants, pharmaceuticals, radiation and radioactive wastes, product safety, workplace hazards, indoor air pollution, biotechnology, victims' compensation, and administrative law. Health and economic consequences of regulation, as well as its potential to spur technological change, are discussed for each regulator regime. Students taking the graduate version are expected to explore the subject in greater depth.  
N. Ashford, C. Caldart

**IDS.620[J] Principles and Practice of Drug Development**  
Same subject as 10.547[J], 15.136[J], HST.920[J]  
Prereq: Permission of instructor  
G (Fall)  
3-0-6 units  
See description under subject 15.136[J].  
S. Finkelstein, A. J. Sinskey, R. Rubin

**IDS.670[J] Planning and Design of Airport Systems**  
Same subject as 1.231[J], 16.781[J]  
Prereq: None  
Acad Year 2021-2022: Not offered  
Acad Year 2022-2023: G (Fall)  
3-0-9 units  
Focuses on current practice, developing trends, and advanced concepts in airport design and planning. Considers economic, environmental, and other trade-offs related to airport location, as well as the impacts of emphasizing "green" measures. Includes an analysis of the effect of airline operations on airports. Topics include demand prediction, determination of airfield capacity, and estimation of levels of congestion; terminal design; the role of airports in the aviation and transportation system; access problems; optimal configuration of air transport networks and implications for airport development; and economics, financing, and institutional aspects. Special attention to international practice and developments.  
R. de Neufville, A. R. Odoni

**IDS.700[J] Applied Probability and Stochastic Models**  
Same subject as 1.203[J], 15.073[J]  
Prereq: 6.041B or 18.600  
G (Spring)  
3-0-9 units  
See description under subject 15.073[J].  
A. Barnett

**IDS.720[J] Tools for Analysis: Design for Real Estate and Infrastructure Development**  
Same subject as 11.434[J], 15.428[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

**IDS.730[J] Logistics Systems**  
Same subject as 1.260[J], 15.770[J], SCM.260[J]  
Subject meets with SCM.271  
Prereq: Permission of instructor  
G (Fall)  
3-0-9 units  
See description under subject SCM.260[J].  
Y. Sheffi, C. Caplice

**IDS.735[J] Supply Chain Planning**  
Same subject as 1.273[J], 15.762[J]  
Prereq: 15.761 or SCM.260[J]  
G (Spring; first half of term)  
2-0-4 units  
See description under subject 15.762[J].  
D. Simchi-Levi

**IDS.736[J] Manufacturing System and Supply Chain Design**  
Same subject as 1.274[J], 15.763[J]  
Prereq: 15.761, 15.778, or SCM.260[J]  
G (Spring; second half of term)  
2-0-4 units  
See description under subject 15.763[J].  
D. Simchi-Levi
**IDS.900 Doctoral Seminar in Social and Engineering Systems**
Prereq: Permission of instructor  
G (Fall)  
2-0-1 units  
Introduces doctoral students to IDSS research areas. Preference to first-year students in SES.  
*A. Abadie, A. Jadbabaie*

**IDS.910 Leadership Development**
Prereq: Permission of instructor  
G (Fall; partial term)  
Not offered regularly; consult department  
1-1-1 units  
Seminar environment created to develop leadership capabilities, and to take advantage of leadership opportunities. An initial Outward Bound experience builds trust, teamwork and communications. Readings and assignments emphasize the characteristics of desired leadership skills. Global leaders participate in the Leadership Lunch series to share their experiences and recommendations. Discussions explore leadership development. Culminates in a personal leadership plan. Restricted to entering students in the Technology and Policy program or instructor permission.  
*Staff*

**IDS.950 Independent Study in Data, Systems, and Society**
Prereq: Permission of IDSS Academic Office  
G (Fall, IAP, Spring, Summer)  
Units arranged [P/D/F]  
Can be repeated for credit.  
For graduate students in IDSS. Individual study in data, systems, and society. Intended to expose student to expert-level domain material. Supervised by a member of MIT’s teaching staff.  
*Consult IDSS Academic Office*

**IDS.951 Independent Study in Technology and Policy**
Prereq: Permission of TPP Education Office  
G (Fall, IAP, Spring, Summer)  
Units arranged [P/D/F]  
Can be repeated for credit.  
For graduate students in TPP. Individual study in technology and policy. Intended to expose student to expert-level domain material. Supervised by a member of MIT’s teaching staff.  
*Consult TPP Education Office*

**IDS.955 Practical Experience in Data, Systems, and Society**
Prereq: None  
G (Fall, IAP, Spring, Summer)  
Units arranged [P/D/F]  
Can be repeated for credit.  
For IDSS doctoral students participating in off-campus practical experiences in data, systems, and society. Before registering for this subject students must have a training offer from a company or organization, must identify a research supervisor, and must receive prior approval from the IDSS Academic Office. Upon completion of the experience students must submit a letter from the company or organization describing the goals accomplished and a substantive final report to the MIT supervisor.  
*Consult IDSS Academic Office*

**IDS.956 Practical Experience in Technology and Policy**
Prereq: None  
G (Fall, IAP, Spring, Summer)  
Units arranged [P/D/F]  
For TPP students participating in off-campus internship experiences in technology and policy. Before registering for this subject, students must have an employment offer from a company or organization, must identify a research supervisor, and must receive prior approval from the TPP Education Office. Upon completion of the internship, student must submit a letter from the employer describing the work accomplished, along with a substantive final report from the student approved by the MIT supervisor.  
*Consult TPP Education Office*

**IDS.960 Teaching in Data, Systems, and Society**
Prereq: None  
G (Fall, IAP, Spring)  
Units arranged [P/D/F]  
Can be repeated for credit.  
For Teaching Assistants in IDSS, in cases where teaching assignment is approved for academic credit. Laboratory, tutorial, or classroom teaching under supervision of a faculty member. Credit for this subject may not be used for any degree granted by IDSS.  
*Consult IDSS Academic Office*
IDS.961 Teaching in Technology and Policy
Prereq: None
G (Fall, IAP, Spring)
Units arranged [P/D/F]
Can be repeated for credit.

For Teaching Assistants in TPP, in cases where teaching assignment is approved for academic credit. Laboratory, tutorial, or classroom teaching under supervision of a faculty member. Credit for this subject may not be used for any degree granted by IDSS.
Consult TPP Academic Office

IDS.970 Research in Data, Systems, and Society
Prereq: None
G (Fall, Spring, Summer)
Units arranged [P/D/F]
Can be repeated for credit.

For Research Assistants in IDSS when assigned research is not used for thesis, but is approved for academic credit. Credit for this subject may not be used for any degree granted by IDSS.
Consult IDSS Academic Office

IDS.971 Research in Technology and Policy
Prereq: None
G (Fall, Spring, Summer)
Units arranged [P/D/F]
Can be repeated for credit.

For research assistants in TPP when assigned research is not used for thesis, but is approved for academic credit. Credit for this subject may not be used for any degree granted by IDSS.
Consult TPP Academic Office

IDS.S00 Special Undergraduate Subject in Data, Systems, and Society
Prereq: Permission of instructor
U (Fall, IAP, Spring, Summer)
Units arranged [P/D/F]
Can be repeated for credit.

Opportunity for study of topics in Data, Systems, and Society not otherwise included in the curriculum. Offerings initiated by faculty on an ad-hoc basis subject to IDSS approval.
Consult IDSS Academic Office

IDS.S01 Special Undergraduate Subject in Data, Systems, and Society
Prereq: Permission of instructor
U (Fall)
Units arranged
Can be repeated for credit.

Opportunity for study of topics in Data, Systems, and Society not otherwise included in the curriculum at MIT. Offerings are initiated by faculty on an ad-hoc basis subject to IDSS approval.
Consult IDSS Academic Office

IDS.S10 Special Undergraduate Subject in Data, Systems, and Society
Prereq: Permission of instructor
U (Fall, IAP, Spring, Summer)
Not offered regularly; consult department
Units arranged [P/D/F]
Can be repeated for credit.

Opportunity for study of topics in Data, Systems, and Society not otherwise included in the curriculum at MIT. Offerings are initiated by faculty on an ad-hoc basis subject to IDSS approval.
Consult IDSS Academic Office

IDS.S11 Special Undergraduate Subject in Data, Systems, and Society
Prereq: None
U (Fall, IAP, Spring, Summer)
Not offered regularly; consult department
Units arranged [P/D/F]
Can be repeated for credit.

Opportunity for study of topics in Data, Systems, and Society not otherwise included in the curriculum. Offerings initiated by faculty on an ad hoc basis subject to IDSS approval.
Consult IDSS Academic Office

IDS.S20 Special Graduate Subject in Data, Systems, and Society
Prereq: Permission of instructor
G (Fall, IAP, Spring, Summer)
Not offered regularly; consult department
Units arranged
Can be repeated for credit.

Opportunity for study of advanced topics in Data, Systems, and Society not otherwise included in the curriculum at MIT. Offerings are initiated by faculty on an ad-hoc basis subject to IDSS approval.
Consult IDSS Academic Office
IDS.S21 Special Graduate Subject in Data, Systems, and Society
Prereq: Permission of instructor
G (Fall, IAP, Spring, Summer)
Not offered regularly; consult department
Units arranged
Can be repeated for credit.

Opportunity for study of advanced topics in Data, Systems, and Society not otherwise included in the curriculum at MIT. Offerings are initiated by faculty on an ad-hoc basis subject to IDSS approval.

*Information: Consult IDSS Academic Office*

IDS.S22 Special Graduate Subject in Data, Systems, and Society
Prereq: Permission of instructor
G (Fall, IAP, Spring, Summer)
Not offered regularly; consult department
Units arranged
Can be repeated for credit.

Opportunity for study of advanced topics in Data, Systems, and Society not otherwise included in the curriculum at MIT. Offerings are initiated by faculty on an ad-hoc basis subject to IDSS approval.

*Consult IDSS Academic Office*

IDS.S23 Special Graduate Subject in Data, Systems, and Society
Prereq: Permission of instructor
G (Fall, IAP, Spring, Summer)
Not offered regularly; consult department
Units arranged
Can be repeated for credit.

Opportunity for study of advanced topics in Data, Systems, and Society not otherwise included in the curriculum at MIT. Offerings are initiated by faculty on an ad-hoc basis subject to IDSS approval.

*Consult IDSS Academic Office*

IDS.S24 Special Graduate Subject in Data, Systems, and Society
Prereq: Permission of instructor
G (Fall, IAP, Spring, Summer)
Not offered regularly; consult department
Units arranged
Can be repeated for credit.

Opportunity for study of advanced topics in Data, Systems, and Society not otherwise included in the curriculum at MIT. Offerings are initiated by faculty on an ad-hoc basis subject to IDSS approval.

*Consult IDSS Academic Office*

IDS.S30 Special Graduate Subject in Data, Systems, and Society
Prereq: None
G (Fall, IAP, Spring, Summer)
Not offered regularly; consult department
Units arranged [P/D/F]
Can be repeated for credit.

Opportunity for study of advanced topics in Data, Systems, and Society not otherwise included in the curriculum at MIT. Offerings are initiated by faculty on an ad-hoc basis subject to IDSS approval.

*Staff*

IDS.S31 Special Graduate Subject in Data, Systems, and Society
Prereq: None
G (Fall, IAP, Spring, Summer)
Not offered regularly; consult department
Units arranged [P/D/F]
Can be repeated for credit.

Opportunity for individual or group study of advanced topics in Data, Systems, and Society not otherwise included in the curriculum at MIT. Offerings are initiated by faculty on an ad-hoc basis subject to IDSS approval.

*Consult IDSS Academic Office*

IDS.S32 Special Graduate Subject in Data, Systems, and Society
Prereq: None
G (Fall, IAP, Spring, Summer)
Not offered regularly; consult department
Units arranged [P/D/F]
Can be repeated for credit.

Opportunity for individual or group study of advanced topics in Data, Systems, and Society not otherwise included in the curriculum at MIT. Offerings are initiated by faculty on an ad-hoc basis subject to IDSS approval.

*Consult IDSS Academic Office*

IDS.THG Graduate Thesis
Prereq: Permission of instructor
G (Fall, IAP, Spring, Summer)
Units arranged
Can be repeated for credit.

Program of research, leading to the writing of an SM or PhD thesis to be arranged by the student with a member of the IDSS faculty. A minimum of 24 thesis units are required for the SM degree.

*Consult IDSS Academic Office*
IDS.UR Undergraduate Research
Prereq: None
U (Fall, IAP, Spring, Summer)
Units arranged [P/D/F]
Can be repeated for credit.

Undergraduate research opportunities in Data, Systems, and Society.
IDSS Academic Office

IDS.URG Undergraduate Research
Prereq: None
U (Fall, IAP, Spring, Summer)
Units arranged
Can be repeated for credit.

Undergraduate research opportunities in Data, Systems, and Society.
Consult IDSS Academic Office