

## DEPARTMENT OF URBAN STUDIES AND PLANNING

The Department of Urban Studies and Planning (DUSP) offers four degree programs: a Bachelor of Science in Planning; a two-year professional Master in City Planning (MCP); a one-year Master of Science in Urban Studies and Planning (reserved for mid-career students); and a PhD in Urban Studies and Planning. In addition, DUSP has other, nondegree programs and affiliations: the Special Program in Urban and Regional Studies (<http://spurs.mit.edu>) (for mid-career professionals from developing countries); the Community Innovators Lab; the Center for Advanced Urbanism (<http://cau.mit.edu>); and the SENSEable City Lab (<http://senseable.mit.edu>). Once students are admitted and enrolled at MIT, it is possible to apply for certificate programs in urban design (offered jointly with the Department of Architecture) or environmental planning.

City and regional planners in the United States and other parts of the world are involved not only in physical and economic development, but also in management of the environmental, social, and design consequences of development. They engage in a variety of activities aimed at shaping the forms and patterns of human settlements, and at providing people with housing, public services, employment opportunities, and other crucial support systems that comprise a decent living environment. Planning encompasses not just a concern for the structure and experience of the built environment, but also a desire to harness the social, economic, political, and technological forces that give meaning to the everyday lives of men and women in residential, work, and recreational settings. Planners operate at the neighborhood, metropolitan, state, national, or international level, in both the public and the private sectors. Their tasks are the same: to help frame the issues and problems that receive attention; to formulate and implement projects, programs, and policies responsive to individual and group needs; and to work with and for various communities in allocating economic and physical resources most efficiently and most equitably.

Planners are often described as "generalists with a specialty." The specialties offered at MIT include city design and development; housing, community, and economic development; international development; and environmental policy and planning, as well as cross-cutting opportunities to study urban information systems, multi-regional systems, and mobility systems. These planning specialties can be distinguished by the geographic levels at which decision making takes place—neighborhood, city, regional, state, national, and global. Subspecialties have also been described in terms of the roles that planners are called upon to play, such as manager, designer, regulator, advocate, educator, evaluator, or futurist.

A focus on the development of practice-related skills is central to the department's mission, particularly for students in the MCP professional degree program. Acquiring these skills and

integrating them with classroom knowledge are advanced through the department's field-based practicum subjects and research, and through internship programs. In fieldwork, students acquire competence by engaging in practice and then bringing field experiences back into the academic setting for reflection and discussion. Students may work with community organizations, government agencies, or private firms under the direction of faculty members involved in field-based projects with outside clients. In some cases, stipends may be available for fieldwork or internship programs. The Department of Urban Studies and Planning is committed to educating planners who can advocate on behalf of underrepresented constituencies.

During the month of January, the department offers a series of "mini-subjects" in specialized fields not covered by the regular curriculum, including both noncredit and for-credit offerings.

Specific opportunities for concentration and specialization available to students are detailed in the descriptions of the degree programs that follow.

### Undergraduate Study

The Department of Urban Studies and Planning offers a Bachelor of Science in Planning; HASS Minors in Urban Studies and Planning, International Development, and Public Policy; and a variety of HASS concentrations. There is also an accelerated SB/MCP program which allows exceptional students to complete their undergraduate and master's degree work in five years.

In addition, DUSP also hosts MIT's Teacher Education Program (TEP), described under Career and Professional Options (<http://catalog.mit.edu/mit/undergraduate-education/career/teacher-licensure-education>) in the Undergraduate Education section. TEP provides an option for students interested in exploring new ideas in teaching and learning as applied to K-12 schools. Studies in TEP can also lead to licensure in math or science teaching at the high school or middle school levels.

### ***Bachelor of Science in Planning (Course 11)***

The Department of Urban Studies and Planning offers an interdisciplinary preprofessional undergraduate major (<http://catalog.mit.edu/degree-charts/planning-course-11>) designed to prepare students for careers in both the public and private sectors. The major also provides a foundation for students who are considering graduate work in law, public policy, international development, urban design, management, and planning. The subjects in the major teach students how the tools of economics, policy analysis, political science, and urban design can be used to solve social and environmental problems in the United States and abroad. In addition, students learn the skills and responsibilities of planners who seek to promote effective and equitable social change.

After satisfying the core requirements, students use their electives to pursue a specific track. We suggest one of the following, but will

accept self-designed options to better meet a student's interest: urban and environmental policy and planning; urban society, history, and politics; or urban and regional public policy. The required laboratory emphasizes urban information systems and offers skills for measurement, representation, and analysis of urban phenomena. In the laboratory subject, students also explore the ways emerging technology can be used to improve government decision making.

Students are encouraged to develop a program that will strengthen their analytic skills, broaden their intellectual perspectives, and test these insights in real-world applications. Students must complete a senior project that synthesizes what they have learned. This project may consist of an analysis of a public policy issue, a report on a problem-solving experience from an internship or other field experience, or a synthesis of research on urban affairs.

**Urban Science and Planning with Computer Science (Course 11-6)**

Urban settlements and technology around the world are rapidly co-evolving as flows of population, finance, and politics are reshaping the very identity of cities and nations globally. We already see rapid and profound change, especially in mega-cities, including pervasive sensing, the growth and availability of continuous data streams, advanced analytics, interactive communications and social networks, and distributed intelligence. Examples of new technologies facilitated by or requiring big data and new informatics concentrated in urban areas include, but are not limited to, autonomous vehicles, sensor-enabled self-management of natural resources, cybersecurity for critical infrastructure biometric identity, the sharing or gig-economy, and continuous public engagement opportunities through social networks and data and visualization.

The Bachelor of Science in Urban Science and Planning with Computer Science (Course 11-6) (<http://catalog.mit.edu/degree-charts/urban-science-planning-computer-science-11-6>) emphasizes the development of fundamental skills in urban planning and policy, including ethics and justice; statistics, data science, geospatial analysis, and visualization; and computer science, robotics, and machine learning. The Course 11-6 program provides numerous opportunities for field-based problem-solving experience through labs, UROP assignments and client-based courses in which students synthesize and empirically integrate what they are learning about theory and practice at the intersection of computer and urban science. Students also have the opportunity to specialize through the selection of a customized concentration of upper-level electives in data visualization, applied spatial analysis, design, and public policy. Students in the program are full members of both departments and of two schools, Architecture and Planning and Engineering.

For more information, email ([duspinfo@mit.edu](mailto:duspinfo@mit.edu)) or call 617-253-9403.

**Five-Year SB-MCP Option**

Undergraduate Course 11 majors may apply for admission to the department's Master in City Planning (MCP) program in their junior year. Students accepted into the five-year program receive both the Bachelor of Science and the MCP at the end of five years. Admission is intended for those undergraduates who have demonstrated exceptional performance in the major and show commitment to the field of city planning. Criteria for admission include the following:

- A strong academic record in Course 11 subjects
- Letters of reference from departmental faculty
- Practical experience in planning, which could be gained through internships, practicums, studios, Undergraduate Research Opportunities Program experiences, summer jobs, etc.
- A mature and passionate interest for the field that warrants further study

Students can obtain more information on the five-year program from Sandra Wellford, undergraduate administrator, Room 7-346A, 617-253-9403.

**Minor in Urban Studies and Planning**

The six-subject Minor in Urban Studies and Planning offers students the opportunity to explore issues in urban studies and planning in some depth. Students initially take two Tier I subjects that establish the political, economic, and design contexts for local, urban, and regional decision making. In addition, students choose four Tier II elective subjects, which provide an opportunity to focus on urban and environmental policy issues or to study urban problems and institutions. Students are encouraged to craft a minor that reflects their own particular interests within the general parameters of the minor program requirements and in consultation with the minor advisor.

Requirements		
11.001[J]	Introduction to Urban Design and Development	12
11.002[J]	Making Public Policy	12
Electives		
Select four Course 11 elective subjects <sup>1</sup>		36-48
Total Units		60-72

<sup>1</sup> In consultation with the advisor, students can select from recommended concentrations described in the department's course maps or create their own stream tailored to a particular set of urban, policy, or planning concerns.

**Minor in International Development**

The HASS Minor in International Development aims to increase students' ability to understand, analyze, and tackle problems of global poverty and economic development in the developing world. Challenges include increasing urbanization; the need for industrial growth as well as jobs for an increasing number of educated youth;

the crisis of resources and infrastructure; the fragmentation of state capacity and rising violence; ethical and moral issues raised by development planning; the role of appropriate technology and research; and popular discontent. The minor emphasizes problem-solving, multidisciplinary, and an understanding of institutions at various levels—from the local to the global—as the keys to solving today’s problems in emerging countries.

The six-subject minor is structured into two tiers. The subjects in the first tier provide a general overview of the history of international development and major theories and debates in the field, and an introduction to the dilemmas of practice. They also introduce the challenges of applying models of interventions across contexts and the importance of understanding local institutional frameworks and political economies across scales and levels of governance.

Subjects in the second tier offer an array of more specialized and advanced subjects to allow students greater depth in specific sectors and international development issues such as public finance, infrastructure and energy, sustainability, the role of technology policy, the form and structure of cities, the politics of urban change and development, the role of law and public policy in development, and the rethinking of development in terms of human rights.

#### Tier I: Introduction to International Development Theories and Practice

Select two of the following:	24
11.005 Introduction to International Development	
11.025[J] D-Lab: Development	
11.140 Urbanization and Development	

#### Tier II: Specialized Topics in International Development

Select four of the following (in consultation with the minor advisor):	42-48
11.002[J] Making Public Policy	
11.027 City to City: Comparing, Researching and Writing about Cities	
11.144 Project Appraisal in Developing Countries	
11.147 Budgeting and Finance for the Public Sector	
11.164[J] Human Rights at Home and Abroad	
11.165 Urban Energy Systems and Policy	
11.166 Law, Social Movements, and Public Policy: Comparative and International Experience	
EC.715 D-Lab: Water, Sanitation and Hygiene	

Total Units 66-72

Additional subjects not listed above may be included in the minor at the discretion of the minor advisor.

Further information can be obtained from Professor Balakrishnan Rajagopal ([braj@mit.edu](mailto:braj@mit.edu)), Room 9-432, 617-253-6315.

#### Minor in Public Policy

The interdisciplinary HASS Minor in Public Policy (<http://catalog.mit.edu/interdisciplinary/undergraduate-programs/minors/public-policy>) is intended to provide a single framework for students interested in the role of public policy in the field of their technical expertise. Because the Course 11 major has a strong public policy element and several subjects are redundant, Course 11 majors are not eligible for the Minor in Public Policy.

#### HASS Concentrations

DUSP offers clusters of subjects that satisfy the Institute requirement. These three-subject clusters allow students either to develop competence within a specific discipline or to explore a particular policy problem. Possible areas of concentration include: designing the urban environment, environmental policy, urban history, policy analysis and urban problems, legal issues and social change, and education. Sample programs are available online (<http://dusp.mit.edu>).

The DUSP concentration focusing on education can also lead to Massachusetts licensure in teaching math and science at the middle and high school levels. This requires taking:

#### Education Concentration Subjects

11.129[J] Educational Theory and Practice I	12
11.130[J] Educational Theory and Practice II	12
11.131[J] Educational Theory and Practice III	12

#### Core Subjects

11.124[J] Introduction to Education: Looking Forward and Looking Back on Education	12
11.125[J] Introduction to Education: Understanding and Evaluating Education	12

More information is available from Eric Klopfer, Room E15-301, 617-253-2025.

#### Graduate Study

The Department of Urban Studies and Planning offers graduate work leading to the Master in City Planning and the Doctor of Philosophy. In conjunction with the Center for Real Estate, the department also offers a Master of Science in Real Estate Development. These programs are open to students from a variety of backgrounds. Urban studies, city planning, architecture, urban design, environmental planning, political science, civil engineering, economics, sociology,

geography, law, management, and public administration all offer suitable preparation. For further information concerning academic programs in the department, application for admission, and financial aid, contact Graduate Admissions, Room 7-346, 617-253-9403.

**Master in City Planning**

The principal professional degree in the planning field is the Master in City Planning (MCP). The Department of Urban Studies and Planning provides graduate education for men and women who will assume professional roles in public, private, and nonprofit agencies, firms, and international institutions, in the United States and abroad. The department seeks to provide MCP students with the skills and specialized knowledge needed to fill traditional as well as emerging planning roles. The MCP is accredited by the American Planning Association.

The two-year Master in City Planning degree program emphasizes mastery of tools for effective practice and is therefore distinct from undergraduate liberal arts programs in urban affairs or doctoral programs that emphasize advanced research skills. MCP graduates work in a broad array of roles, from "traditional" city planning to economic, social, and environmental planning, as well as urban design. In addition to its basic core requirements, the program offers four areas of specialization: City Design and Development; Environmental Policy and Planning; Housing, Community, and Economic Development; and International Development. MCP students, in their application to the department, select one of these areas of specialization and, when applicable, indicate interest in cross-cutting programs in transportation planning, urban information systems, and regional planning.

Each student's plan of study in the MCP Program is set forth in a program statement developed jointly by the student and faculty advisor during the student's first term. Linked to career development goals, the program statement describes the purposes and goals of study, the proposed schedule of subjects, the manner in which competence in a specialization is developed, and an indication of a possible thesis topic.

**Degree Requirements**

Students are expected to take a minimum of 36 credit units each term (at least three subjects, though more frequently four), yielding at least 126 total units, in addition to the thesis.

A collection of subjects and requirements to be taken during the student's two years in the MCP program constitute a "core experience" viewed as central to the professional program. The core subjects and requirements include the following:

An introductory subject in the chosen specialization area, taken in the first term of the first year		
11.201	Gateway: Urban Studies and Planning	12
11.202	Planning Economics	4

11.203	Microeconomics <sup>1</sup>	8
11.205	Introduction to Spatial Analysis <sup>1</sup>	6
11.220	Quantitative Reasoning and Statistical Methods for Planning I <sup>1</sup>	12

At least one core practicum subject, selected from an approved list, during the two-year program

A thesis preparation seminar in the area of specialization, taken during the second or third term of study

<sup>1</sup> Students can test out of these subjects.

Students identified as having weaker writing skills are also encouraged to take a writing course.

All students are required to submit a thesis on a topic of their choice. The department encourages MCP students to avoid the traditional perception of the thesis as a "mini-dissertation," and to think instead of a client-oriented, professional document that bridges academic and professional concerns. While most of the thesis work occurs during the last term of the second year, students are urged to begin the process of defining a thesis topic early in the second year through their participation in a required thesis preparation seminar.

Students in the MCP Program are encouraged to integrate fieldwork and internships with academic coursework. The Department of Urban Studies and Planning provides a variety of individual and group field placements involving varying degrees of faculty participation and supervision. Academic credit is awarded for field experience, although some students choose instead to participate in the work-study financial aid program. The department also sponsors a variety of seminars in which students have an opportunity to reflect on their field experiences.

The **City Design and Development (CDD)** group engages, researches, and projects the physical planning of cities, regions, and their built and natural environments, at scales and locations that range from urban neighborhoods and city cores to outer suburbs. Graduates work in a variety of private, public, and nonprofit roles as urban designers, planning and design consultants, municipal and regional planners, managers of public agencies, advocates of historic and landscape preservation, housing, and land use regulations, real estate development, and as planners of transportation and mobility systems. CDD is closely associated with faculty and students in the Department of Architecture's Urbanism field, the Center for Advanced Urbanism, Center for Real Estate, SENSEable City Lab, and Media Lab. Many subjects are cross-listed with these groups. CDD's diverse educational offerings, ranging from studios to seminars, lectures, and workshops, ensure that every student can develop unique competence and intellectual depth in the field. CDD students may also elect to pursue the Urban Design Certificate, for those who wish to be involved in shaping the physical form and logistical function of cities, or pursue an additional year of study through DUSP's SM in Advanced Urbanism. Individual faculty within

CDD also work in areas that include landscape urbanism; resilient cities and housing; land use planning and regulation; innovation districts; parametric urbanism; and much more.

The Center for Advanced Urbanism—jointly administered by faculty from the CDD group and the Urbanism group in the Department of Architecture—is a research-based institution dedicated to implementing new collaborative models of design and urban research.

The **Environmental Policy and Planning (EPP)** group emphasizes the study of how society conserves and manages its natural resources and works to promote sustainable development. Areas of concern include the role of science in environmental policy-making, climate change mitigation and adaptation, sustainable international development, adaptive ecosystem management, environmental justice, global environmental treaty making, environmental regulation, energy efficiency and renewable energy, the role of private corporations in environmental management, the public health impacts of environmental planning, infrastructure planning, and the mediation of environmental disputes. Students investigate the interactions between built and natural systems; the effectiveness of different approaches to environmental planning and policymaking; techniques for describing, modeling, forecasting, and evaluating changes in environmental quality; approaches to environmental policy analysis; strategies for stakeholder involvement in environmental planning; and mechanisms for assessing the choices posed by the environmental impacts of new technology in local, state, national, and international contexts.

The **Housing, Community, and Economic Development (HCED)** group focuses on the equitable development of communities in the United States, at the neighborhood, city, and regional scales. Its mission is to prepare professionals with the skills and knowledge to be responsible leaders of public, private, and nonprofit sector organizations and networks engaged in equitable development. The group is driven by a deep faculty commitment to expanding opportunity and improving quality of life for historically disadvantaged groups. HCED emphasizes ongoing, empowering partnerships with those affected by change—often those who are organizing to lead local improvement efforts. Many faculty and students also have an interest in global markets and federal and state policy. For decades, the group’s faculty and students have helped shape policy, practice and research in housing, economic, workforce, and comprehensive community development. Increasingly, HCED connects to efforts that promote public health, environmental sustainability, and more inclusive “digital cities” as well. HCED promotes an integrated and dynamic approach to learning, helping prepare students for careers as problem solvers who can perform in varied roles: policy analyst or policy maker, advocate and organizer, mediator, evaluator, program designer, investor and entrepreneur, project developer and manager. At the doctoral level, HCED prepares students not only to

produce but also to shape the next generation of creative teaching and scholarship.

The **International Development Group (IDG)** draws on the experiences of developing and newly industrializing countries throughout the world as the basis for advice about planning at the local, regional, national, and global levels. IDG provides students with an integrated view of the institutional, legal, historical, economic, technological, and sociopolitical factors that have shaped successful planning experiences and how they translate into action. Class content and faculty expertise include economic development at various scales; human rights and rights-based approaches to development, ethical and moral issues raised by development planning, the challenge of planning amidst popular discontent; regional planning (including decentralization); finance and project evaluation; housing, human settlements, and infrastructure services (transportation, telecommunications, water, sanitation, sewerage); institutions of economic growth; law and economic development; industrialization and industrial policies (including privatization); poverty-reducing and employment-increasing interventions including informal sector, nongovernment organizations, and small enterprises; comparative urban and metropolitan politics and policy; property and land rights, comparative property and land use law, collective action, and common property issues (water, forestry, grazing, agriculture); human rights and development; conflict and social dynamics in cities; post-conflict development; and globalization and governance.

**Urban Information Systems (UIS)** is a cross-cutting group that connects faculty, staff, and students who are interested in the ways information and communication technologies impact urban planning. Research topics include building neighborhood information systems to facilitate public participation in planning; exploring the complex relationships underlying urban spatial structure, land use, transportation, and the environment; modeling urban futures and metropolitan growth scenarios; and experimenting with mobile computing, location-based services, and the community building, planning, and urban design implications of ubiquitous computing. Associated faculty are engaged in many related research projects through the SENSEable City Lab, the Civic Data Design Lab, the Urban Mobility Lab, the Center for Advanced Urbanism, and MIT-wide interdisciplinary research initiatives such as the Future Urban Mobility project in Singapore. Through seminars and related activities, we share experiences and find ways to collaborate on the technical, planning, and social science aspects of making information technology-enabled urban futures more responsive to public and private interests in ways that are transparent and equitable.

Much of UIS's work involves the development and use of planning-related software and the urban analytics, spatial analysis tools, and systems (such as GIS and distributed geoprocessing) that are increasingly important parts of urban planning methods and metropolitan information infrastructures. However, UIS interests go beyond the development and use of specific technologies

and extend to an examination of the ripple effects of computing, communications, and digital spatial information on current planning practices and on the meaning and value of the impacted communities and planning institutions.

### ***Simultaneous Master's Degrees in City Planning and Architecture***

Students who have been admitted to either the Department of Urban Studies and Planning or the Department of Architecture can propose a program of joint work in the two fields that will lead to the simultaneous awarding of two degrees. Degree combinations may be MCP/MArch or MCP/SMArchS. A student must apply by the January deadline prior to beginning the last full year of graduate study for the first degree: MCP and SMArchS. SMArchS students must apply during their first year at MIT (by the end of the first term); MArch students must apply during or before their second year. Students are first approved by the Dual Degree Committee and then considered during the spring admissions process. All candidates for simultaneous degrees must meet the requirements of both degrees, but may submit a joint thesis.

### ***Simultaneous Master's Degrees in City Planning and Transportation***

Students who have been admitted to study for the Master in City Planning or the Master of Science in Transportation may apply to the other program during their first year of study and propose a program of joint work in the two fields that will lead to the simultaneous awarding of two degrees. Details of this program are provided under Interdepartmental Programs in the Civil and Environmental Engineering section.

### ***Simultaneous Master's Degrees in City Planning and Real Estate Development***

Students who have been admitted to the Master in City Planning Program or the Master of Science in Real Estate Development Program may apply to the other program during their first year of study and propose a program of joint work in the two fields that will lead to the simultaneous awarding of two degrees. Students may submit a joint thesis.

### ***Master of Science in Urban Studies and Planning***

Under special circumstances, admission may be granted to candidates seeking a one-year Master of Science (SM) degree. The SM is intended for professionals with a number of years of distinguished practice in city planning or related fields who have a clear idea of the courses they want to take at MIT, the thesis they want to write, and the DUSP faculty member with whom they wish to work. That faculty member must be prepared to advise the candidate when at MIT and to submit a letter of recommendation so indicating as part of the candidate's application. This process means that prior to submitting an application the candidate must contact the appropriate DUSP faculty member to establish such a relationship. The SM does not require the candidate to take the core courses, which are mandatory for MCP candidates. As indicated above, a

thesis is required. For further information concerning the SM option, contact Graduate Admissions, Room 7-346, 617-253-9403.

### ***Doctor of Philosophy***

The PhD is the advanced research degree in urban planning or urban studies. Admission requirements are substantially the same as for the master's degree, but additional emphasis is placed on academic preparation, professional experience, and the fit between the student's research interests and the department's research activities. Nearly all successful applicants have previously completed a master's degree.

The doctoral program emphasizes the development of research competence and the application of research methods to exploring critical planning questions. Students work under the mentorship of a faculty advisor. They may focus their studies on any subfield of planning in which the faculty in the department have expertise.

After successful completion of coursework, students are required to take oral and written qualifying general exams in two fields: an intellectual discipline (city design and development, international development, public policy, urban information systems, regional and urban economics, or urban sociology) and a field to which this discipline is applied and that coincides with the student's research interest and possible dissertation topic. Doctoral candidates are expected to complete the qualifying general examinations before beginning their third year of residence. Upon completing the qualifying general examination and a colloquium about the dissertation proposal, a PhD candidate must write and successfully defend a doctoral dissertation that gives evidence of the capacity to do independent and innovative research.

A minimum of 72 units plus 36 units for the dissertation (a minimum of 108 units) is required for the PhD degree.

Interested and qualified students can undertake joint doctoral programs with the Department of Political Science or the Department of Civil and Environmental Engineering.

### ***Interdisciplinary Programs***

#### ***Graduate Programs in Transportation***

MIT provides a broad range of opportunities for transportation-related education. Courses and classes span the School of Engineering, the Sloan School of Management, and the School of Architecture and Planning, with many activities covering interdisciplinary topics that prepare students for future industry, government, or academic careers.

A variety of graduate degrees are available to students interested in transportation studies and research, including a Master of Science in Transportation and PhD in Transportation, described under Interdisciplinary Graduate Programs, as well as a nine-month Master of Engineering Transportation program, described in the Master of

Engineering program for the Department of Civil and Environmental Engineering.

### ***Environmental Planning Certificate***

Students in the MCP and PhD program who complete a prescribed set of subjects are awarded a Certificate in Environmental Planning. For further information contact Takeo Kuwabara ([takeok@mit.edu](mailto:takeok@mit.edu)).

### ***Urban Design Certificate***

Students in the MCP, MArch, or SMArchS programs who complete a specific curriculum of subjects in history and theory, public policy, development, studios and workshops, and a thesis in the field of urban design are awarded a Certificate in Urban Design by the School of Architecture and Planning. For further information contact the Joint Program in City Design and Development office, Room 10-485, 617-253-5115.

### ***Nondegree Programs***

A limited number of nondegree students are admitted to the department each term. This special student status is especially designed for professionals interested in developing specialized skills, but is also available to others.

The **MIT Community Innovators Lab (CoLab)** supports faculty and students to work with low-income and excluded people in the United States, Latin America, and the Caribbean, tapping their energy, creativity, and in-depth knowledge of the issues they face to tackle poverty, climate change, and mass urbanization. Launched in 2007, CoLab supports faculty and student collaboration on field-based projects working with departments, laboratories, and centers across the Institute on action research while providing important resources to community leaders.

CoLab offers instruction and tools—practice-based classes, study groups, tutoring, coaching, mentoring, as well as IAP courses in reflective practice, civic engagement, action research, use of social media, storytelling, and visual mapping—to help students embed and apply technical learning in real societal contexts, equipping them with the resources they will need to take leadership roles in an increasingly complex world. Its dense network of innovative practitioners in the US, Latin America, and the Caribbean augment faculty instruction with field-based coaching, helping to train the next generation of practitioners and scholars committed to addressing social exclusion and sustainability—two of the greatest global challenges of our time.

In addition to work in communities, CoLab hosts regular programs that bring nationally recognized leaders to share their work and help inform the Institute's research agenda. The Mel King Community Fellows Program convenes an annual cohort of advanced practitioners from a range of relevant fields who are grappling with challenges of equitable and sustainable development. CoLab also provides community and industry leaders with private deliberative space in which they can explore emerging issues while allowing students up-close opportunities to participate in collaborative

brainstorming sessions. Along with CoLab workshops, CoLab Radio (the center's blog) and online programming, roundtables, speaker series, and lunchtime talks, these activities enliven and enrich the Institute's intellectual community by infusing it with a powerful diversity of voices and insights.

CoLab is located in Room 9-419. Further information can be found on the CoLab website (<http://colab.mit.edu>) and blog (<http://colabradio.mit.edu>).

The **Special Program for Urban and Regional Studies (SPURS)** is a one-year program designed for mid-career professionals from developing and newly industrializing countries. SPURS was founded in 1967 as part of the Department of Urban Studies and Planning (DUSP), which has a long-standing commitment to bringing outstanding individuals to MIT to reflect on their professional practice in the field of international development. The program is designed to nurture individuals, often at a turning point in their professional careers, to retool and reflect on their policy-making and planning skills. SPURS Fellows return to their countries with a better understanding of the complex set of relationships among local, regional, and international issues. SPURS has hosted over 676 women and men from more than 117 countries in Latin America, Asia, Africa, the Middle East, and Eastern and Central Europe. SPURS alumni/ae hold senior level positions in both the public and private sectors in their countries.

For further information contact Nimfa de Leon, Room 9-435, 617-253-5915 or visit the SPURS website (<http://web.mit.edu/spurs/www>).

### **Inquiries**

For further information concerning academic programs in the department, application for admission, and financial aid, contact Graduate Admissions, Room 7-346, 617-253-9403.

### **Faculty and Teaching Staff**

Eran Ben-Joseph, PhD  
Head, Department of Urban Studies and Planning  
Professor of Landscape Architecture and Urban Planning

**Professors**  
Alan M. Berger, MLA  
Professor of Urban Design and Landscape Architecture

Joseph Ferreira Jr, PhD  
Professor Post-Tenure of Urban Planning and Operations Research

Robert M. Fogelson, PhD  
Professor of Urban Studies  
Professor of History  
(On leave, spring)

Dennis M. Frenchman, MArch, MCP  
Class of 1922 Professor  
Professor of Urban Design and Planning

David M. Geltner, PhD  
Professor of Real Estate Finance

Amy K. Glasmeier, PhD  
Professor of Economic Geography and Regional Planning

Eric Klopfer, PhD  
Professor of Comparative Media Studies/Writing  
Professor of Education

Jennifer S. Light, PhD  
Professor of Science, Technology, and Society  
Professor of Urban Studies and Planning  
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Bishwapriya Sanyal, PhD  
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Professor of International Development and Planning

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Dean, School of Architecture and Planning

Anne Whiston Spirn, PhD  
Cecil and Ida Green Distinguished Professor  
Professor of Planning  
Professor of Landscape Architecture

Lawrence E. Susskind, PhD  
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Lawrence Vale, DPhil  
Ford International Professor in Urban Studies  
Professor of Urban Design and Planning

James Wescoat, PhD  
Aga Khan Professor  
Professor of Urban Studies and Planning

**Associate Professors**

Gabriella Carolini, PhD  
Associate Professor of International Development and Urban  
Planning  
(On leave, fall)

David Hsu, PhD  
Ford Career Development Professor  
Associate Professor of Urban and Environmental Planning  
(On leave, spring)

Erica C. James, PhD  
Associate Professor of Medical Anthropology and Urban Studies  
Associate Professor of Anthropology

Janelle Knox-Hayes, PhD  
Associate Professor of Economic Geography and Planning

Balakrishnan Rajagopal, SJD  
Associate Professor of Law and Development

Brent D. Ryan, PhD  
Associate Professor of Urban Design and Public Policy

Albert Saiz, PhD  
Daniel Rose Professor  
Associate Professor of Urban Economics and Real Estate  
(On leave)

J. Phillip Thompson, PhD  
Associate Professor of Political Science and Urban Planning  
(On leave)

Sarah E. Williams, MCP  
Homer A. Burnell Career Development Professor  
Associate Professor of Information Technologies and Urban Planning  
Member, Institute for Data, Systems, and Society

P. Christopher Zegras, PhD  
Associate Professor of Urban Planning and Transportation

Jinhua Zhao, PhD  
Associate Professor of Urban Planning and Transportation  
Member, Institute for Data, Systems, and Society  
(On leave, fall)

Siqi Zheng, PhD  
Samuel Tak Lee Professor  
Associate Professor of Real Estate Development and  
Entrepreneurship

**Assistant Professors**

Mariana Arcaya, ScD  
Spaulding Career Development Professor  
Assistant Professor of Urban Planning and Public Health



Jason Jackson, PhD  
Ford Career Development Professor  
Assistant Professor of Political Economy and Urban Planning

Justin Steil, JD, PhD  
Spaulding Career Development Professor  
Assistant Professor of Law and Urban Planning  
(On leave, spring)

### ***Professors of the Practice***

Cesar L. McDowell, EdD  
Professor of the Practice of Civic Design

Carlo Ratti, PhD  
Professor of the Practice of Urban Technologies

### ***Adjunct Professors***

Terry S. Szold, MRP  
Adjunct Professor of Land Use Planning  
(On leave)

### ***Senior Lecturers***

Claus Otto Scharmer, PhD  
Senior Lecturer in Management  
Senior Lecturer in Urban Studies and Planning

Karl Seidman, MPP  
Senior Lecturer of Economic Development and Planning

Walter N. Torous, PhD  
Senior Lecturer in Urban Studies and Planning

### ***Lecturers***

Cherie Abbanat, MCP  
Lecturer of International Development and Urban Studies

Sarah Abrams, MS  
Lecturer in Urban Studies and Planning

Marie Law Adams, MArch  
Lecturer of Urban Design and Planning

Jennifer Cookke, MS, MBA  
Lecturer in Urban Studies and Planning

Dayna L. Cunningham, MBA, JD  
Lecturer in Urban Studies and Planning

Peter Del Tredici, PhD  
Lecturer in Applied Ecology and Planning

Ezra Glenn, MA  
Lecturer in Urban Studies and Planning

Christopher Gordon, MS  
Lecturer of Real Estate

John Kennedy, MS  
Lecturer of Real Estate

W. Tod McGrath, MBA  
Lecturer of Real Estate

Julie Newman, PhD  
Lecturer of Environmental Planning and Sustainability

Mary Anne Ocampo, MArch  
Lecturer of Urban Design and Planning

Elizabeth Reynolds, PhD  
Lecturer of Innovation and Economic Development

Peter Roth, MS, MArch  
Lecturer of Real Estate

Gloria Schuck, PhD  
Lecturer of Real Estate

Kairos Shen, MS  
Lecturer of Real Estate

Yanni Tsipis, MS  
Lecturer of Real Estate

Bruno Verdini Trejo, PhD  
Lecturer of Urban Planning and Negotiation

### ***Technical Instructors***

Eric Huntley, PhD  
Technical Instructor of GIS, Data Visualization and Graphics

### ***Professors Emeriti***

Phillip L. Clay, PhD  
Class of 1922 Professor Emeritus  
Professor Emeritus of Urban Studies and Planning

Ralph Gakenheimer, PhD  
Professor Emeritus of Urban Planning

Gary A. Hack, MArch, PhD  
Professor Emeritus of Urban Design

Frank S. Jones, MBA  
Professor Emeritus of Urban Affairs

Langley C. Keyes Jr, PhD  
Ford International Professor Emeritus  
Professor Emeritus of City and Regional Planning

Melvin H. King, MEd  
Senior Lecturer Emeritus of Urban Studies and Planning

Tunney F. Lee, BArch  
Professor Emeritus of Architecture and Urban Studies and Planning

Frank Levy, PhD  
Daniel Rose Professor Emeritus  
Professor Emeritus of Urban Economics

Gary Marx, PhD  
Professor Emeritus of Sociology

Lisa R. Peattie, PhD  
Professor Emerita of Urban Anthropology

Karen R. Polenske, PhD  
Professor Emerita of Regional Political Economy and Planning

William C. Wheaton, PhD  
Professor Emeritus of Urban Studies and Planning  
Professor Emeritus of Economics

Clarence G. Williams, PhD  
Adjunct Professor Emeritus of Urban Studies and Planning

## Introductory Subjects

### **11.001[J] Introduction to Urban Design and Development**

Same subject as 4.250[J]

Prereq: None

U (Fall)

3-0-9 units. HASS-H

Examines the evolving structure of cities and the way that cities, suburbs, and metropolitan areas can be designed and developed. Surveys the ideas of a wide range of people who have addressed urban problems. Stresses the connection between values and design. Demonstrates how physical, social, political and economic forces interact to shape and reshape cities over time.

*L. Vale*

### **11.002[J] Making Public Policy**

Same subject as 17.30[J]

Prereq: None

U (Fall)

4-0-8 units. HASS-S; CI-H

Examines how the struggle among competing advocates shapes the outputs of government. Considers how conditions become problems for government to solve, why some political arguments are more persuasive than others, why some policy tools are preferred over others, and whether policies achieve their goals. Investigates the interactions among elected officials, think tanks, interest groups, the media, and the public in controversies over global warming, urban sprawl, Social Security, health care, education, and other issues.

*Staff*

### **11.003[J] Methods of Policy Analysis**

Same subject as 17.303[J]

Prereq: 11.002[J]; *Coreq: 14.01*

Acad Year 2018-2019: Not offered

Acad Year 2019-2020: U (Spring)

3-0-9 units. HASS-S

Provides students with an introduction to public policy analysis. Examines various approaches to policy analysis by considering the concepts, tools, and methods used in economics, political science, and other disciplines. Students apply and critique these approaches through case studies of current public policy problems.

*Staff*

### **11.004[J] People and the Planet: Environmental Histories and Engineering**

Same subject as STS.033[J]

Subject meets with 11.204[J], IDS.524[J]

Prereq: None

Acad Year 2018-2019: Not offered

Acad Year 2019-2020: U (Spring)

3-3-6 units. HASS-E

Explores historical and cultural aspects of complex environmental problems and engineering approaches to sustainable solutions. Introduces quantitative analyses and methodological tools to understand environmental issues that have human and natural components. Demonstrates concepts through a series of historical and cultural analyses of environmental challenges and their engineering responses. Builds writing, quantitative modeling, and analytical skills in assessing environmental systems problems and developing engineering solutions. Through environmental data gathering and analysis, students engage with the challenges and possibilities of engineering in complex, interacting systems, and investigate plausible, symbiotic, systems-oriented solutions. Students taking graduate version complete additional analysis of reading assignments and a more in-depth and longer final paper.

*A. Glasmeier, J. Knox-Hayes, A. Slocum, R. Scheffler, J. Trancik*

**11.005 Introduction to International Development**

Prereq: None

U (Spring)

3-0-9 units. HASS-S

Introduces the political economy of international economic development planning, using an applied, quantitative approach. Considers why some countries are able to develop faster than others. Presents major theories and models of development and underdevelopment, providing tools to understand the mechanisms and processes behind economic growth and broader notions of progress. Offers an alternative view of development, focusing on the persistence of dichotomies in current theory and practice. Using specific cases, explores how different combinations of actors and institutions at various scales may promote or inhibit economic development. Students re-examine conventional knowledge and engage critically with the assumptions behind current thinking and policy.

*Staff***11.006 Poverty and Economic Security**

Subject meets with 11.206

Prereq: None

Acad Year 2018-2019: Not offered

Acad Year 2019-2020: U (Spring)

3-0-9 units. HASS-S

Explores the evolution of poverty and economic security in the US within a global context. Examines the impacts of recent economic restructuring and globalization. Reviews current debates about the fate of the middle class, sources of increasing inequality, and approaches to advancing economic opportunity and security. Students taking graduate version complete additional assignments.

*A. Glasmeier***11.007 Urban and Environmental Technology Implementation Lab (New)**

Prereq: None

U (Fall)

2-2-8 units

Real-world clients and environmental problems form the basis of a project in which teams of students develop strategies for analysis and implementation of new sensor technology within cities.

Working closely with a partner or client based on the MIT campus or in Cambridge, students assess the environmental problem, implement prototypes, and recommend promising solutions to the client for implementation. Equipment and working space provided. Limited to 12.

*D. Hsu***11.011 The Art and Science of Negotiation**

Prereq: None

U (Fall, Spring)

3-0-9 units. HASS-S

Introduction to negotiation theory and practice. Applications in government, business, and nonprofit settings are examined. Combines a "hands-on" personal skill-building orientation with a look at pertinent theory. Strategy, communications, ethics, and institutional influences are examined as they shape the ability of actors to analyze problems, negotiate agreements, and resolve disputes in social, organizational, and political circumstances characterized by interdependent interests.

*B. Verdini***11.013[J] American Urban History**

Same subject as 21H.217[J]

Prereq: None

U (Fall)

2-0-7 units. HASS-H; CI-H

Seminar on the history of institutions and institutional change in American cities from roughly 1850 to the present. Among the institutions to be looked at are political machines, police departments, courts, schools, prisons, public authorities, and universities. Focuses on readings and discussions.

*R. M. Fogelson***11.014[J] History of the Built Environment in the US**

Same subject as 21H.218[J]

Prereq: None

U (Fall)

2-0-7 units. HASS-H; CI-H

Seminar on the history of selected features of the physical environment of urban America. Among the features considered are parks, cemeteries, tenements, suburbs, zoos, skyscrapers, department stores, supermarkets, and amusement parks.

*R. M. Fogelson***11.015[J] Riots, Strikes, and Conspiracies in American History**

Same subject as 21H.226[J]

Prereq: None

U (Spring)

Not offered regularly; consult department

3-0-9 units. HASS-H; CI-H

See description under subject 21H.226[J].

*R. M. Fogelson*

**11.016[J] The Once and Future City**

Same subject as 4.211[J]

Prereq: None

Acad Year 2018-2019: Not offered

Acad Year 2019-2020: U (Spring)

3-0-9 units. HASS-H; CI-H

Examines the evolving structure of cities, the dynamic processes that shape them, and the significance of a city's history for its future development. Develops the ability to read urban form as an interplay of natural processes and human purposes over time. Field assignments in Boston provide the opportunity to use, develop, and refine these concepts. Enrollment limited.

*A. Spirn*

**11.021[J] Environmental Law, Policy, and Economics: Pollution Prevention and Control**

Same subject as 1.801[J], 17.393[J], IDS.060[J]

Subject meets with 1.811[J], 11.630[J], 15.663[J], IDS.540[J]

Prereq: None

U (Fall)

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*

**11.022[J] Regulation of Chemicals, Radiation, and Biotechnology**

Same subject as 1.802[J], IDS.061[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*

**11.025[J] D-Lab: Development**

Same subject as EC.701[J]

Subject meets with 11.472[J], EC.781[J]

Prereq: None

U (Fall)

3-2-7 units. HASS-S

See description under subject EC.701[J]. Enrollment limited by lottery; must attend first class session.

*S. L. Hsu, A. B. Smith, B. Sanyal*

**11.026[J] Downtown**

Same subject as 21H.321[J]

Subject meets with 11.339

Prereq: None

U (Spring)

Not offered regularly; consult department

2-0-7 units. HASS-H

See description under subject 21H.321[J].

*R. M. Fogelson*

**11.027 City to City: Comparing, Researching and Writing about Cities**

Prereq: Permission of instructor  
 Acad Year 2018-2019: U (Spring)  
 Acad Year 2019-2020: Not offered  
 3-0-9 units. HASS-S

Introduces client-oriented research and the use of urban planning tools. Students work directly with government and community agencies to find solutions to real world problems; interview planners and other field experts, and write and present findings to client and community audiences. Opportunity to travel for research. Limited to 14; preference to Course 11 majors.

*C. Abbanat*

**Specialized Subjects****11.111[J] Leadership in Negotiation: Advanced Applications**

Same subject as 17.381[J]  
 Prereq: 11.011 or permission of instructor  
 U (Spring)  
 4-0-8 units. HASS-S

Building on the skills and strategies honed in 11.011, explores advanced negotiation through theory and practice. Emphasizes an experiential, personal skill-building approach, underpinned by foundational and cutting-edge research. Examines applications in management, public policy, social entrepreneurship, international diplomacy, and scientific discovery. Strengthens collaborative decision-making, communication, and leadership skills while enhancing students' ability to proactively frame conflicts, analyze problems, engage stakeholders, create value, negotiate agreements, and resolve disputes. Limited to 36.

*B. Verdini*

**11.123 Big Plans and Mega-Urban Landscapes**

Prereq: None  
 U (Spring)  
 3-0-6 units. HASS-S

Explores the physical, ecological, technological, political, economic and cultural implications of big plans and mega-urban landscapes in a global context. Uses local and international case studies to understand the process of making major changes to urban landscape and city fabric, and to regional landscape systems. Includes lectures by leading practitioners. Assignments consider planning and design strategies across multiple scales and time frames.

*Staff*

**11.124[J] Introduction to Education: Looking Forward and Looking Back on Education (New number CMS.586)**

Same subject as CMS.586[J]  
 Prereq: None  
 U (Fall)  
 3-6-3 units. HASS-S; CI-H

See description under subject CMS.586[J]. Limited to 25.  
*E. Klopfer*

**11.125[J] Introduction to Education: Understanding and Evaluating Education (New)**

Same subject as CMS.587[J]  
 Prereq: None  
 U (Spring)  
 3-6-3 units. HASS-S; CI-H

See description under subject CMS.587[J]. Limited to 25.  
*E. Klopfer*

**11.127[J] Design and Development of Games for Learning**

Same subject as CMS.590[J]  
 Subject meets with 11.252[J], CMS.863[J]  
 Prereq: None  
 U (Spring)  
 3-6-3 units. HASS-H

Immerses students in the process of building and testing their own digital and board games in order to better understand how we learn from games. Explores the design and use of games in the classroom in addition to research and development issues associated with computer-based (desktop and handheld) and non-computer-based media. In developing their own games, students examine what and how people learn from them (including field testing of products), as well as how games can be implemented in educational settings. All levels of computer experience welcome. Students taking graduate version complete additional assignments.

*E. Klopfer*

**11.129[J] Educational Theory and Practice I (New number CMS.591)**

Same subject as CMS.591[J]  
 Prereq: None. *Coreq: CMS.586[J]*  
 U (Fall)  
 3-0-9 units. HASS-S

See description under subject CMS.591[J]. Limited to 15; preference to juniors and seniors.

*G. Schwanbeck*

**11.130[J] Educational Theory and Practice II (New)**

Same subject as CMS.592[J]

Prereq: CMS.591[J]

U (IAP)

3-0-9 units

See description under subject CMS.592[J].

*G. Schwanbeck*

**11.131[J] Educational Theory and Practice III (New)**

Same subject as CMS.593[J]

Prereq: CMS.592[J]

U (Spring)

3-0-9 units. HASS-S

See description under subject CMS.593[J].

*G. Schwanbeck*

**11.133[J] Dilemmas in Biomedical Ethics: Playing God or Doing Good? (21A.302)**

Same subject as 21A.302[J], WGS.271[J]

Prereq: None

Acad Year 2018-2019: Not offered

Acad Year 2019-2020: U (Fall)

3-0-9 units. HASS-S

An introduction to the cross-cultural study of biomedical ethics. Examines moral foundations of the science and practice of western biomedicine through case studies of abortion, contraception, cloning, organ transplantation and other issues. Evaluates challenges that new medical technologies pose to the practice and availability of medical services around the globe, and to cross-cultural ideas of kinship and personhood. Discusses critiques of the biomedical tradition from anthropological, feminist, legal, religious, and cross-cultural theorists.

*E. C. James*

**11.134[J] Infections and Inequalities: Interdisciplinary Perspectives on Global Health (21A.331)**

Same subject as 21A.331[J], HST.431[J]

Prereq: None

Acad Year 2018-2019: Not offered

Acad Year 2019-2020: U (Spring)

3-0-9 units. HASS-S

Examines case studies in infectious disease outbreaks to demonstrate how human health is a product of multiple determinants, such as biology, sociocultural and historical factors, politics, economic processes, and the environment. Analyzes how structural inequalities render certain populations vulnerable to illness and explores the moral and ethical dimensions of public health and clinical interventions to promote health. Limited to 25.

*E. James, A. Chakraborty*

**11.135[J] Violence, Human Rights, and Justice (21A.442)**

Same subject as WGS.270[J]

Prereq: None

U (Spring)

Not offered regularly; consult department

3-0-9 units. HASS-S

An examination of the problem of mass violence and oppression in the contemporary world, and of the concept of human rights as a defense against such abuse. Explores questions of cultural relativism, race, gender and ethnicity. Examines case studies from war crimes tribunals, truth commissions, anti-terrorist policies and other judicial attempts to redress state-sponsored wrongs. Considers whether the human rights framework effectively promotes the rule of law in modern societies. Students debate moral positions and address ideas of moral relativism.

*E. C. James*

**11.137 Financing Economic Development**

Subject meets with 11.437

Prereq: None

U (Fall)

4-0-8 units

Focuses on financing tools and program models to support local economic development. Provides an overview of private capital markets and financing sources to understand capital market imperfections that constrain economic development, business accounting, financial statement analysis, federal economic development programs, and public finance tools. Covers policies and program models, including revolving loan funds, guarantee programs, venture capital funds, bank holding companies, community development loan funds and credit unions, micro enterprise funds, and the Community Reinvestment Act. Students taking graduate version complete additional assignments. Limited to 25.

*K. Seidman*

**11.139 The City in Film**

Subject meets with 11.239

Prereq: None

U (Spring)

2-2-5 units. HASS-H; CI-H

Surveys important developments in urbanism from 1900 to the present, using film as a lens to explore and interpret aspects of the urban experience in the US and abroad. Topics include industrialization, demographics, diversity, the environment, and the relationship between the community and the individual. Films vary from year to year but always include a balance of classics from the history of film, an occasional experimental/avant-garde film, and a number of more recent, mainstream movies. Students taking undergraduate version complete writing assignments that focus on observation, analysis, and the essay, and give an oral presentation. Limited to 18.

*E. Glenn*

**11.140 Urbanization and Development**

Subject meets with 11.480

Prereq: None

U (Spring)

Not offered regularly; consult department

3-0-9 units. HASS-S

Examines developmental dynamics of rapidly urbanizing locales, with a special focus on the developing world. Case studies from India, China, Mexico, Brazil, and South Africa form the basis for discussion of social, spatial, political and economic changes in cities spurred by the decline of industry, the rise of services, and the proliferation of urban mega projects. Emphasizes the challenges of growing urban inequality, environmental risk, citizen displacement, insufficient housing, and the lack of effective institutions for metropolitan governance. Students taking graduate version complete additional assignments.

*Staff*

**11.142 Geography of the Global Economy**

Prereq: None

Acad Year 2018-2019: Not offered

Acad Year 2019-2020: U (Spring)

3-0-9 units. HASS-S

Analyzes implications of economic globalization for communities, regions, international businesses and economic development organizations. Uses spatial analysis techniques to model the role of energy resources in shaping international political economy. Investigates key drivers of human, physical, and social capital flows and their roles in modern human settlement systems. Surveys contemporary models of industrialization and places them in geographic context. Connects forces of change with their implications for the distribution of wealth and human well-being. *A. Glasmeier*

**11.143[J] Research Methods in Global Health and Development (21A.300)**

Same subject as 21A.300[J]

Subject meets with 11.243[J], 21A.329[J]

Prereq: None

U (Fall)

3-3-6 units. HASS-S

Provides training for students to critically analyze the relationship between "health" and "development." Draws upon the theory and methods of medical anthropology, social medicine, public health, and development to track how culture, history, and political economy influence health and disease in global communities. Students work in teams to formulate research questions, and collect and analyze qualitative data in clinical and community settings in the greater Boston area, in order to design effective development interventions aimed at reducing health disparities in the US and abroad. Students taking graduate version complete additional assignments.

*E. C. James*

**11.144 Project Appraisal in Developing Countries**

Subject meets with 11.484

Prereq: Permission of instructor

U (Spring)

Not offered regularly; consult department

3-0-9 units

Covers techniques of financial analysis of investment expenditures, as well as the economic and distributive appraisal of development projects. Critical analysis of these tools in the political economy of international development is discussed. Topics include appraisal's role in the project cycle, planning under conditions of uncertainty, constraints in data quality and the limits of rational analysis, and the coordination of an interdisciplinary appraisal team. Students taking graduate version complete additional assignments. Enrollment limited; preference to majors.

*Y. Hong*

**11.145 International Housing Economics and Finance**

Prereq: 14.01

U (Spring)

3-0-6 units

Credit cannot also be received for 11.355

Presents a theory of comparative differences in international housing outcomes. Introduces institutional differences in the ways housing expenditures are financed, and the economic determinants of housing outcomes, such as construction costs, land values, housing quality, and ownership rates. Analyzes the flow of funds to and from the different national housing finance sectors. Develops an understanding of the greater financial and macroeconomic implications of the mortgage credit sector, and how policies affect the ways housing asset fluctuations impact national economies. Considers the perspective of investors in international real estate markets and the risks and rewards involved. Draws on lessons from an international comparative approach, and applies them to economic and finance policies at the local, state/provincial, and federal levels within a country of choice. Meets with 11.355 when offered concurrently. Students taking graduate version complete additional assignments.

*A. Saiz*

**11.146 Urbanizing China**

Subject meets with 11.476

Prereq: None

U (Fall)

Not offered regularly; consult department

2-0-7 units

Discusses China's daunting urban challenges: congestion and smog, housing affordability, land reform and urban financing, migrants and locals, and social and spatial inequality. Provides examples of laudable achievements and diverse and innovative responses across more than six hundred cities. Presents China's urbanization as the joint result of natural socioeconomic processes and conscious actions by governments, markets, and the public. Presents multidisciplinary approaches and alternative narratives. Examines the intricate interaction between state and market in China's context, yielding a variety of state-market 'cocktails' devised and experimented in different cities in response to local problems, each involving a multilayered projection onto urban space. Students taking graduate version complete additional assignments.

*J. Zhao*

**11.147 Budgeting and Finance for the Public Sector**

Subject meets with 11.487

Prereq: Permission of instructor

Acad Year 2018-2019: Not offered

Acad Year 2019-2020: U (Spring)

3-0-9 units. HASS-S

Examines globally relevant challenges of adequately and effectively attending to public sector responsibilities for basic services with limited resources. Particular attention to the contexts of fiscal crises and rapid population growth, as well as shrinkage, through an introduction to methods and processes of budgeting, accounting, and financial mobilization. Case studies and practice exercises explore revenue strategies, demonstrate fiscal analytical competencies, and familiarize students with pioneering examples of promising budget and accounting processes and innovative funding mobilization via taxation, capital markets, and other mechanisms (e.g., land-value capture). Students taking graduate version explore the subject in greater depth.

*G. Carolini*



**11.148 Environmental Justice: Law and Policy**

Subject meets with 11.368

Prereq: None

Acad Year 2018-2019: Not offered

Acad Year 2019-2020: U (Fall)

3-0-9 units. HASS-S

Introduces frameworks for analyzing and addressing inequalities in the distribution of environmental benefits and burdens. Explores the foundations and principles of the environmental justice movement from the perspectives of social science, public policy, and law. Applies environmental justice principles to contemporary issues in urban policy and planning. Students taking graduate version complete additional assignments.

*Staff*

**11.150[J] Metropolis: A Comparative History of New York City**

Same subject as 21H.220[J]

Prereq: None

U (Fall)

Not offered regularly; consult department

3-0-9 units. HASS-H

See description under subject 21H.220[J].

*C. Wilder*

**11.151[J] Youth Political Participation**

Same subject as STS.080[J]

Prereq: None

Acad Year 2018-2019: Not offered

Acad Year 2019-2020: U (Spring)

3-0-9 units. HASS-H

See description under subject STS.080[J]. Limited to 40.

*J. S. Light*

**11.152[J] The Ghetto: From Venice to Harlem**

Same subject as 21H.385[J]

Prereq: None

U (Spring)

Not offered regularly; consult department

3-0-9 units. HASS-S

See description under subject 21H.385[J].

*C. Wilder*

**11.153[J] Shanghai and China's Modernization**

Same subject as 21H.351[J]

Prereq: None

U (Fall)

Not offered regularly; consult department

2-0-10 units. HASS-H

See description under subject 21H.351[J].

*C. Leighton*

**11.154 Big Data, Visualization, and Society (New)**

Subject meets with 11.454

Prereq: None

U (Spring)

3-0-9 units

Studies data visualization as a way for architects, planners and policy experts to communicate with the public. Develops technical skills to work with big data to answer or expose urban issues, which include cleaning and aggregating data in python, D3, and other web-based visualization software, and accessing APIs to download data. Students work with a big data set in a particular urban area and use the data to answer a policy question. Students taking graduate version complete additional assignments.

*S. Williams*

**11.156 Healthy Cities: Assessing Health Impacts of Policies and Plans**

Subject meets with 11.356

Prereq: None

U (Spring)

3-0-9 units

Examines the built, psychosocial, economic, and natural environment factors that affect health behaviors and outcomes. Introduces tools designed to integrate public health considerations into policymaking and planning. Provides extensive practical training in the application of health impact assessment (HIA) methodology, which brings a health lens to policy, budgeting, and planning debates. Emphasizes health equity and healthy cities. Students taking graduate version complete additional assignments. Limited to 30.

*M. Arcaya*

**11.158 Behavior and Policy: Connections in Transportation**

Subject meets with 11.478

Prereq: None

U (Spring)

3-0-9 units

Examines the behavioral foundation for policy design using urban transportation examples. Introduces multiple frameworks for understanding behavior while contrasting the perspectives of classic economic theory with behavioral economics and social psychology. Suggests corresponding policy interventions and establishes a mapping across behavior, theory, and policy. Presents a spectrum of instruments for positively influencing behavior and improving welfare. Challenges students to critique, design, implement and interpret experiments that nudge travel behavior. Brings behavioral insights to creative design of transport policies that are efficient and equitable as well as simple, consistent, transparent, acceptable, and adaptive to behavioral changes. Students taking graduate version complete additional assignments.

*J. Zhao*

**11.159 Entrepreneurial Negotiation**

Subject meets with 11.259

Prereq: None

U (Fall, Spring; first half of term)

1-3-2 units

Combines online weekly face-to-face negotiation exercises and in-person lectures designed to empower budding entrepreneurs with negotiation techniques to protect and increase the value of their ideas, deal with ego and build trust in relationships, and navigate entrepreneurial bargaining under constraints of economic uncertainty and complex technical considerations. Students must complete scheduled weekly assignments, including feedback memos to counterpart negotiators, and meet on campus with the instructor to discuss and reflect on their experiences with the course. Students taking graduate version complete additional assignments.

*L. Susskind*

**11.162 Politics of Energy and the Environment**

Prereq: None

U (Spring)

Not offered regularly; consult department

3-0-9 units. HASS-S

Focuses on the politics of making local, state, national and international decisions on energy and the environment. Topics include implementing energy efficiency measures, siting nuclear and alternative energy plants, promoting oil and gas development offshore and in wilderness, adapting to climate change, handling toxic waste, protecting endangered species, and conserving water. Case studies include Cape Wind, disputes over oil and gas exploration in the Arctic, the response to Hurricane Katrina, and efforts to craft and comply with the greenhouse gas emissions limits.

*Staff*

**11.164[J] Human Rights at Home and Abroad**

Same subject as 17.391[J]

Subject meets with 11.497

Prereq: Permission of instructor

Acad Year 2018-2019: Not offered

Acad Year 2019-2020: U (Fall)

2-0-10 units. HASS-S

Provides a rigorous and critical introduction to the history, foundation, structure, and operation of the human rights movement. Focuses on key ideas, actors, methods and sources, and critically evaluates the field. Addresses current debates in human rights, including the relationship with security, democracy, development and globalization, urbanization, equality (in housing and other economic and social rights; women's rights; ethnic, religious and racial discrimination; and policing/conflict), post-conflict rebuilding and transitional justice, and technology in human rights activism. No prior coursework needed, but work experience, or community service that demonstrates familiarity with global affairs or engagement with ethics and social justice issues, preferred. Students taking graduate version are expected to write a research paper.

*B. Rajagopal*

**11.165 Urban Energy Systems and Policy**

Subject meets with 1.286[], 11.477[]

Prereq: 14.01 or permission of instructor

Acad Year 2018-2019: Not offered

Acad Year 2019-2020: U (Fall)

3-0-9 units. HASS-S

Examines efforts in developing and advanced nations and regions. Examines key issues in the current and future development of urban energy systems, such as technology, use, behavior, regulation, climate change, and lack of access or energy poverty. Case studies on a diverse sampling of cities explore how prospective technologies and policies can be implemented. Includes intensive group research projects, discussion, and debate. Students taking the graduate version complete additional assignments.

*D. Hsu*

**11.166 Law, Social Movements, and Public Policy: Comparative and International Experience**

Subject meets with 11.496

Prereq: Permission of instructor

U (Spring)

Not offered regularly; consult department

3-0-9 units. HASS-S

Studies the interaction between law, courts, and social movements in shaping domestic and global public policy. Examines how groups mobilize to use law to affect change and why they succeed and fail. Case studies explore the interplay between law, social movements, and public policy in current issues, such as gender, race, labor, trade, climate change/environment, and LGBTQ rights. Introduces theories of public policy, social movements, law and society, and transnational studies. Students taking graduate version complete additional assignments. Limited to 15.

*B. Rajagopal*

**11.167[] Global Energy: Politics, Markets, and Policy**

Same subject as 14.47[], 15.2191[], 17.399[]

Prereq: None

U (Spring)

3-0-9 units. HASS-S

Credit cannot also be received for 11.267[], 15.219[]

See description under subject 15.2191[]. Preference to juniors, seniors, and Energy Minors.

*V. Karplus*

**11.169 Global Climate Policy and Sustainability**

Subject meets with 11.269

Prereq: None

U (Spring)

3-0-9 units. HASS-S

Examines climate politics both nationally and globally. Addresses economic growth, environmental preservation, and social equity through the lens of sustainability. Uses various country and regional cases to analyze how sociopolitical, economic and environmental values shape climate policy. Students develop recommendations for making climate policy more effective and sustainable. Students taking the graduate version complete additional assignments.

Limited to 25.

*J. Knox-Hayes*

**Laboratories****11.188 Urban Planning and Social Science Laboratory**

Prereq: None

U (Spring)

3-3-6 units. Institute LAB

Credit cannot also be received for 11.205

An introduction to the research and empirical analysis of urban planning issues using geographic information systems. Extensive hands-on exercises provide experience with various techniques in spatial analysis and querying databases. Includes a small project on an urban planning problem involving the selection of appropriate methods, the use of primary and secondary data, computer-based modeling, and spatial analysis. Requires some computing experience.

*J. Ferreira*

**Tutorials, Fieldwork, and Internships****11.UR Undergraduate Research**

Prereq: None

U (Fall, IAP, Spring, Summer)

Units arranged [P/D/F]

Can be repeated for credit.

Undergraduate research opportunities in Urban Studies and Planning. For further information, consult the Departmental Coordinators.

*J. Ferreira, Jr.*

### **11.URG Undergraduate Research**

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

Undergraduate research opportunities in Urban Studies and Planning. For further information, consult the Departmental Coordinators.

*E. Klopfer*

### **11.THT[J] Thesis Research Design Seminar**

Same subject as 4.THT[J]  
Prereq: None  
U (Fall)  
3-0-9 units  
Can be repeated for credit.

Designed for students writing a thesis in Urban Studies and Planning or Architecture. Develop research topics, review relevant research and scholarship, frame research questions and arguments, choose an appropriate methodology for analysis, and draft introductory and methodology sections.

*C. Abbanat*

### **11.THU Undergraduate Thesis**

Prereq: 11.THT[J]  
U (Fall, IAP, Spring, Summer)  
Units arranged  
Can be repeated for credit.

Program of research leading to the writing of an SB thesis. To be arranged by the student under approved supervision.

*Staff*

### **11.189-11.190 Urban Fieldwork**

Prereq: None  
U (Fall, Spring)  
Units arranged [P/D/F]  
Can be repeated for credit.

Practical application of city and regional planning techniques to towns, cities, and regions, including problems of replanning, redevelopment, and renewal of existing communities. Includes internships, under staff supervision, in municipal and state agencies and departments.

*Staff*

### **11.191-11.192 Independent Study**

Prereq: None  
U (Fall, IAP, Spring)  
Units arranged [P/D/F]  
Can be repeated for credit.

For undergraduates wishing to pursue further study in specialized areas of urban studies or city and regional planning not covered in regular subjects.

*Staff*

### **11.193-11.194 Supervised Readings**

Prereq: None  
U (Fall, Spring)  
Units arranged [P/D/F]  
Can be repeated for credit.

Reading and discussion of topics in urban studies and planning.

*Staff*

### **11.S195 Special Subject: Urban Studies and Planning**

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

For undergraduates wishing to pursue further study or fieldwork in specialized areas of urban studies or city and regional planning not covered in regular subjects of instruction.

*Staff*

### **11.S196-11.S199 Special Subject: Urban Studies and Planning**

Prereq: None  
U (Spring)  
Units arranged  
Can be repeated for credit.

For undergraduates wishing to pursue further study or fieldwork in specialized areas of urban studies or city and regional planning not covered in regular subjects of instruction. 11.S198 is graded P/D/F.

*Staff*

## **Master's Core Subjects**

### **11.201 Gateway: Urban Studies and Planning**

Prereq: None  
G (Fall)  
4-1-7 units

Introduces the history, theory and praxis of urban and regional planning.

*J. Jackson*

**11.202 Planning Economics**

Prereq: 11.203

G (Spring; partial term)

2-0-2 units

Introduces applications of microeconomic theory to planning problems including urban form and structure, government's role in urban settings and problems of housing finance.

*A. Saiz***11.203 Microeconomics**

Prereq: None

G (Spring; partial term)

3-0-5 units

Introduces basic economic analysis for planning students including the functioning of markets, the allocation of scarce resources among competing uses, profit maximizing behavior in different market structures. Course illustrates theory with contemporary economic issues.

*A. Saiz***11.204[J] People and the Planet: Environmental Histories and Engineering (New)**

Same subject as IDS.524[J]

Subject meets with 11.004[J], STS.033[J]

Prereq: None

Acad Year 2018-2019: Not offered

Acad Year 2019-2020: G (Spring)

3-3-6 units

Explores historical and cultural aspects of complex environmental problems and engineering approaches to sustainable solutions. Introduces quantitative analyses and methodological tools to understand environmental issues that have human and natural components. Demonstrates concepts through a series of historical and cultural analyses of environmental challenges and their engineering responses. Builds writing, quantitative modeling, and analytical skills in assessing environmental systems problems and developing engineering solutions. Through environmental data gathering and analysis, students engage with the challenges and possibilities of engineering in complex, interacting systems, and investigate plausible, symbiotic, systems-oriented solutions. Students taking graduate version complete additional analysis of reading assignments and a more in-depth and longer final paper.

*J. Knox-Hayes, A. Slocum, R. Scheffler, J. Trancik***11.205 Introduction to Spatial Analysis**

Prereq: None

G (Fall, Spring; partial term)

2-2-2 units

Credit cannot also be received for 11.188

Practical introduction to spatial analysis and geographic information systems (GIS). Examines how geography is represented digitally and how nonrandom distributions of phenomena as diverse as poverty and scenic resources can be better understood by examining their spatial characteristics. Limited enrollment; preference to first-year MCP students.

*S. Williams, J. Ferreira***11.206 Poverty and Economic Security**

Subject meets with 11.006

Prereq: None

Acad Year 2018-2019: Not offered

Acad Year 2019-2020: G (Spring)

3-0-9 units

Explores the evolution of poverty and economic security in the US within a global context. Examines the impacts of recent economic restructuring and globalization. Reviews current debates about the fate of the middle class, sources of increasing inequality, and approaches to advancing economic opportunity and security. Students taking graduate version complete additional assignments.

*A. Glasmeier***11.220 Quantitative Reasoning and Statistical Methods for Planning I**

Prereq: Permission of instructor

G (Fall)

4-2-6 units

Develops logical, empirically based arguments using statistical techniques and analytic methods. Covers elementary statistics, probability, and other types of quantitative reasoning useful for description, estimation, comparison, and explanation. Emphasizes the use and limitations of analytical techniques in planning practice. Restricted to MCP students.

*J. Zhao*

## Department-wide Subjects

### 11.225 Argumentation and Communication

Prereq: None

G (Fall)

Not offered regularly; consult department

2-0-4 units

Can be repeated for credit.

A writing practicum associated with 11.201 that focuses on helping students write and present their ideas in cogent, persuasive arguments and other analytical frameworks. Reading and writing assignments and other exercises stress the connections between clear thinking, critical reading, and effective writing.

*C. Abbanat*

### 11.229 Advanced Writing Seminar

Prereq: None

G (Spring)

Not offered regularly; consult department

2-0-7 units

Can be repeated for credit.

Focuses on writing and speaking skills. Students bring their writing from other classes to the workshop to practice reviewing and rewriting skills and make several oral presentations. Different types of writing including proposals, memos, thesis, press releases, and writing sound bites for the media.

*C. Abbanat*

### 11.233 Research Design for Policy Analysis and Planning

Prereq: Permission of instructor

G (Fall)

3-0-9 units

Develops skills in research design for policy analysis and planning. Emphasizes the logic of the research process and its constituent elements. Topics include philosophy of science, question formulation, hypothesis generation and theory construction, data collection techniques (e.g. experimental, survey, interview), ethical issues in research, and research proposal preparation. Limited to doctoral students in Course 11.

*G. Carolini*

### 11.234 Making Sense: Qualitative Methods for Designers and Planners

Prereq: None

G (Spring)

3-3-6 units

Surveys uses of qualitative methods and social theory in urban design and planning research and practice. Topics include observing environments, physical traces, and environmental behavior; asking questions; focused interviews; standardized questionnaires; use of written archival materials; use of visual materials, including photographs, new media, and maps; case studies; and comparative methods. Emphasizes use of each of these skills to collect and make sense of qualitative data in community and institutional settings.

*E. C. James*

### 11.236 Participatory Action Research (PAR) 1

Prereq: None

G (Fall; partial term)

2-0-4 units

Introduces students to participatory action research (PAR), an approach to research and inquiry that enables communities to examine and address consequential societal problems. Explores theoretical and practical questions at the heart of partnerships between applied social scientists and community partners. Focus includes the history of PAR and action research; debates regarding PAR as a form of applied social science; and practical, political, and ethical questions in the practice of PAR. Guides students through an iterative process for developing their own personal theories of practice.

*D. Cunningham*

### 11.237 Participatory Action Research (PAR) 2

Prereq: 11.236 or permission of instructor

G (Spring; partial term)

3-0-3 units

Focuses on co-designing and co-conducting research with community partners at various stages of the research process; examination of actual cases in which PAR-like methods have been used with greater or lesser success; and interaction with community members, organizations, and individuals who have been involved in PAR collaborations. Students produce a PAR research proposal, as well as content that can be added to the PAR website.

*D. Cunningham*

**11.238[J] Ethics of Intervention**

Same subject as 21A.409[J]

Prereq: Permission of instructor

Acad Year 2018-2019: Not offered

Acad Year 2019-2020: G (Fall)

3-0-9 units

An historical and cross-cultural study of the logics and practices of intervention: the ways that individuals, institutions, and governments identify conditions of need or states of emergency within and across borders that require a response. Examines when a response is viewed as obligatory, when is it deemed unnecessary, and by whom; when the intercession is considered fulfilled; and the rationales or assumptions that are employed in assessing interventions. Theories of the state, globalization, and humanitarianism; power, policy, and institutions; gender, race, and ethnicity; and law, ethics, and morality are examined.

*E. C. James*

**11.239 The City in Film**

Subject meets with 11.139

Prereq: Permission of instructor

G (Spring)

2-2-5 units

Surveys important developments in urbanism from 1900 to the present, using film as a lens to explore and interpret aspects of the urban experience in the US and abroad. Topics include industrialization, demographics, diversity, the environment, and the relationship between the community and the individual. Films vary from year to year but always include a balance of classics from the history of film, an occasional experimental/avant-garde film, and a number of more recent, mainstream movies. Students taking undergraduate version complete writing assignments that focus on observation, analysis, and the essay, and give an oral presentation.

*E. Glenn*

**11.243[J] Research Methods in Global Health and Development (21A.329)**

Same subject as 21A.329[J]

Subject meets with 11.143[J], 21A.300[J]

Prereq: None

G (Fall)

3-3-6 units

Provides training for students to critically analyze the relationship between "health" and "development." Draws upon the theory and methods of medical anthropology, social medicine, public health, and development to track how culture, history, and political economy influence health and disease in global communities. Students work in teams to formulate research questions, and collect and analyze qualitative data in clinical and community settings in the greater Boston area, in order to design effective development interventions aimed at reducing health disparities in the US and abroad. Students taking graduate version complete additional assignments.

*E. C. James*

**11.245[J] DesignX Entrepreneurship**

Same subject as 4.245[J]

Prereq: Permission of instructor

G (IAP)

6-0-0 units

Students work in teams to create their own design and business narrative, technology and social strategies, and preliminary plan for moving their innovation forward. Lectures and workshops are interspersed with one-on-one critiques with instructors and outside mentors in specific areas of student interest. Students visit SA +P alumni firms to learn how principals have developed their own business, technology, design, and civic platforms. End-of-term presentation highlights important features of their venture. Limited to 30; preference to students in DesignX Program.

*D. Frenchman and G. Rosenzweig*

**11.246[J] DesignX Accelerator**

Same subject as 4.246[J]

Prereq: Permission of instructor

G (Spring)

2-4-6 units

Students work in entrepreneurial teams to advance innovative ideas, products, services, and firms oriented to design and the built environment. Lectures, demonstrations, and presentations are supplemented by workshop time, when teams interact individually with instructors and industry mentors, and by additional networking events and field trips. At the end of the term, teams pitch for support of their venture to outside investors, accelerators, companies, or cities. Limited to 30; preference to students in DesignX Program.

*D. Frenchman, G. Rosenzweig*

**11.250 Transportation Research Design**

Prereq: Permission of instructor

G (Spring)

2-0-1 units

Can be repeated for credit.

Seminar dissects ten transportation studies from head to toe to illustrate how research ideas are initiated, framed, analyzed, evidenced, written, presented, criticized, revised, extended, and published, quoted and applied. Students design and execute their own transportation research. Limited to 20.

*J. Zhao*

**11.252[[ Design and Development of Games for Learning**

Same subject as CMS.863[[

Subject meets with 11.127[[], CMS.590[[

Prereq: None

G (Spring)

3-6-3 units

Immerses students in the process of building and testing their own digital and board games in order to better understand how we learn from games. Explores the design and use of games in the classroom in addition to research and development issues associated with computer-based (desktop and handheld) and non-computer-based media. In developing their own games, students examine what and how people learn from them (including field testing of products), as well as how games can be implemented in educational settings. All levels of computer experience welcome. Students taking graduate version complete additional assignments.

*E. Klopfer*

**11.255 Negotiation and Dispute Resolution in the Public Sector**

Prereq: None

G (Spring)

4-0-8 units

Investigates social conflict and distributional disputes in the public sector. While theoretical aspects of conflict and consensus building are considered, focus is on the practice of negotiation and dispute resolution. Comparisons between unassisted and assisted negotiation are reviewed along with the techniques of facilitation and mediation.

*L. Susskind*

**11.259 Entrepreneurial Negotiation**

Subject meets with 11.159

Prereq: None

G (Fall, Spring; first half of term)

1-3-2 units

Combines online weekly face-to-face negotiation exercises and in-person lectures designed to empower budding entrepreneurs with negotiation techniques to protect and increase the value of their ideas, deal with ego and build trust in relationships, and navigate entrepreneurial bargaining under constraints of economic uncertainty and complex technical considerations. Students must complete scheduled weekly assignments, including feedback memos to counterpart negotiators, and meet on campus with the instructor to discuss and reflect on their experiences with the course. Students taking graduate version complete additional assignments.

*L. Susskind*

**11.260 Sustainable Development and Institutions**

Prereq: None

G (Fall)

Not offered regularly; consult department

3-0-9 units

Explores the theory and application of the principles of sustainable development as they relate to organizational change management, decision-making processes, goal setting methodology and solution development. Leverages the MIT campus as a living laboratory to gain unique insight into the change management and solution development process. Limited to 18.

*J. Newman*

**11.263[[ Urban Last-Mile Logistics (New)**

Same subject as 1.263[[], SCM.293[[

Prereq: None

G (Spring; second half of term)

2-0-4 units

See description under subject SCM.293[[.

*M. Winkenbach*

**11.267[[ Global Energy: Politics, Markets, and Policy**

Same subject as 15.219[[

Prereq: None

G (Spring)

3-0-9 units

Credit cannot also be received for 11.167[[], 14.47[[], 15.2191[[], 17.399[[

See description under subject 15.219[[.

*V. Karplus*



**11.269 Global Climate Policy and Sustainability**

Subject meets with 11.169

Prereq: None

G (Spring)

3-0-9 units

Examines climate politics both nationally and globally. Addresses economic growth, environmental preservation, and social equity through the lens of sustainability. Uses various country and regional cases to analyze how sociopolitical, economic and environmental values shape climate policy. Students develop recommendations for making climate policy more effective and sustainable. Students taking graduate version complete additional assignments. Limited to 25.

*J. Knox-Hayes*

**Program Group Subjects****11.301[] Introduction to Urban Design and Development**

Same subject as 4.252[]

Prereq: Permission of instructor

G (Fall)

3-0-9 units

Examines the physical and social structure of cities and ways they can be changed. Includes historical forces that have produced cities, models of urban form, contemporary theories of urban design, implementation strategies. Core lectures are supplemented by student projects analyzing the evolution of urban place, and factors of high quality urban design and development. Guest speakers present cases involving current projects illustrating the scope and methods of urban design practice.

*D. Frenchman*

**11.302[] Urban Design Politics**

Same subject as 4.253[]

Prereq: Permission of instructor

G (Spring)

3-0-9 units

Examines ways urban design contributes to distribution of political power and resources in cities. Investigates the nature of relations between built form and political purposes through close study of a wide variety of situations where public sector design commissions and planning processes have been clearly motivated by political pressures. Lectures and discussions focus on specific case studies of 20th-century government-sponsored designs carried out under diverse regimes in the US, Europe, and elsewhere.

*L. Vale*

**11.303[] Real Estate Development Studio**

Same subject as 4.254[]

Prereq: Permission of instructor

G (Spring)

6-0-12 units

Focuses on the synthesis of urban, mixed-use real estate projects, including the integration of physical design and programming with finance and marketing. Interdisciplinary student teams analyze how to maximize value across multiple dimensions in the process of preparing professional development proposals for sites in US cities and internationally. Reviews emerging real estate products and innovative developments to provide a foundation for studio work. Two major projects are interspersed with lectures and field trips. Integrates skills and knowledge in the MSRED program; also open to other students interested in real estate development by permission of the instructors.

*D. Frenchman, K. Shen*

**11.304[] Site and Environmental Systems Planning**

Same subject as 4.255[]

Prereq: Permission of instructor

G (Spring)

6-0-9 units

Introduces a range of practical approaches involved in evaluating and planning sites within the context of natural and cultural systems. Develops the knowledge and skills to analyze and plan a site for development through exercises and an urban design project. Topics include land inventory, urban form, spatial organization of uses, parcelization, design of roadways, grading, utility systems, off-site impacts, and landscape architecture.

*M. A. Ocampo*

**11.307[] China Urban Design Studio**

Same subject as 4.173[]

Prereq: Permission of instructor

G (Spring)

0-18-0 units

Design studio that includes architects and city planners working in teams on a contemporary development project of importance in China, particularly in transitional, deindustrializing cities. Students analyze conditions, explore alternatives, and synthesize architecture, city design, and implementation plans. Lectures and brief study tours expose students to history and contemporary issues of urbanism in China. Offered each spring at MIT in parallel with urban design studio at Tsinghua University, Beijing, involving students and faculty from both schools. Field visit to China will occur in January prior to studio. Limited to 10.

*B. Ryan*

**11.308[] Ecological Urbanism Seminar**

Same subject as 4.213[]  
Prereq: Permission of instructor  
G (Fall)  
3-0-9 units

Examines the urban environment as a natural phenomenon, human habitat, medium of expression, and forum for action. Subject has two related, major themes: how ideas of nature influence the way cities are perceived, designed, built, and managed; and how natural processes and urban form interact and the consequences of these for human health safety and welfare. Enrollment limited.

*A. Spirn*

**11.309[] Sensing Place: Photography as Inquiry**

Same subject as 4.215[]  
Prereq: None  
G (Fall)  
3-0-9 units

Explores photography as a disciplined way of seeing, of investigating urban landscapes and expressing ideas. Readings, observations, and photographs form the basis of discussions on light, detail, place, poetics, narrative, and how photography can inform design and planning. Enrollment limited.

*A. Spirn*

**11.312 Engaging Community: Models and Methods for Strengthening Democracy**

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

Students examine design principles, and review and practice strategies, techniques, and methods for creating public engagement practices that are necessary for building inclusive civic infrastructure in cities, with the premise that demographic complexity presents fundamental design challenges for planners and other professions that have a responsibility to engage the public.

*C. McDowell*

**11.313 Advanced Research Workshop in Landscape and Urbanism**

Prereq: Permission of instructor  
G (Spring)  
Not offered regularly; consult department  
3-0-9 units

In-depth research workshop on pressing environmental design issue of our time, includes discussion and practices of various Landscape-based disciplines used to generate design-based solutions and landscape infrastructural responses to physical urban entropy and decline. Specific focus is adjusted each year.

*A. Berger*

**11.314[] Water, Landscape and Urban Design**

Same subject as 4.214[]  
Prereq: Permission of instructor  
Acad Year 2018-2019: Not offered  
Acad Year 2019-2020: G (Spring)  
3-3-6 units  
Can be repeated for credit.

See description under subject 4.214[]. Limited to 15.

*J. Wescoat*

**11.315[] Disaster Resilient Design**

Same subject as 4.217[]  
Subject meets with 4.218  
Prereq: None  
Acad Year 2018-2019: Not offered  
Acad Year 2019-2020: G (Fall)  
3-0-6 units

See description under subject 4.217[]. Limited to 15.

*J. Wescoat*

**11.318 Senseable Cities**

Prereq: Permission of instructor  
G (Spring)  
Not offered regularly; consult department  
3-0-9 units

Studies how ubiquitous and real-time information technology can help us to understand and improve cities and regions. Explores the impact of integrating real-time information technology into the built environment. Introduces theoretical foundations of ubiquitous computing. Provides technical tools for tactile development of small-scale projects. Limited to 24.

*C. Ratti*

**11.320 Digital City Design Workshop**

Prereq: Permission of instructor

G (Spring)

3-0-9 units

Students develop proposals, at the city and neighborhood scales, that integrate urban design, planning, and digital technology. Aims to create more efficient, responsive, and livable urban places and systems that combine physical form with digital media, sensing, communications, and data analysis. Students conduct field research, build project briefs, and deliver designs or prototypes, while supported by lectures, case studies, and involvement from experts and representatives of subject cities. Limited to 12.

*C. Ratti***11.328[] Urban Design Skills: Observing, Interpreting, and Representing the City**

Same subject as 4.240[]

Prereq: None

G (Fall)

4-2-9 units

Introduces methods of recording, evaluating, and representing the urban environment. Through visual observation, field analysis, measurements, interviews, and other means, students draw on their senses and develop their ability to deduce, conclude, question, and test conclusions about how the environment is used and valued. Using representational tools such as drawing, photographing, computer modeling and desktop publishing, students communicate what they observe along with their impressions and design ideas. Intended as a foundation for future studio work in urban design. Includes design-based projects.

*E. Ben-Joseph***11.330[] The Making of Cities**

Same subject as 4.241[]

Subject meets with 4.251

Prereq: 11.001[], 11.301[], or permission of instructor

G (Spring)

Units arranged

See description under subject 4.241[].

*L. Jacobi, R. Segal***11.332[] Urban Design Studio**

Same subject as 4.163[]

Prereq: Permission of instructor

G (Fall)

Units arranged

Can be repeated for credit.

See description under subject 4.163[].

*Consult J. Wescoat***11.333[] Urban Design Seminar: Perspectives on Contemporary Practice**

Same subject as 4.244[]

Prereq: None

G (Spring)

2-0-7 units

Examines innovations in urban design practice occurring through the work of leading practitioners in the fields of architecture, landscape architecture, and urban planning. Features lectures by major national and global practitioners in urban design. Projects and topics vary based on term and speakers but may cover architectural urbanism, landscape and ecology, arts and culture, urban design regulation and planning agencies, and citywide and regional design. Focuses on analysis and synthesis of themes discussed in presentations and discussions.

*Staff***11.334[] Advanced Seminar in Landscape and Urbanism**

Same subject as 4.264[]

Prereq: Permission of instructor

Acad Year 2018-2019: Not offered

Acad Year 2019-2020: G (Spring)

3-0-9 units

Explores theories, practices, and emerging trends in the fields of landscape architecture and urbanism, such as systemic design, landscape urbanism, engineered nature, drosscapes, urban biodiversity, urban mobility, megaregions, and urban agriculture. Lectures, readings, and guest speakers present a wide array of multi-disciplinary topics, including current works from P-REX lab. Students conduct independent and group research that is future-oriented.

*A. Berger***11.337[] Urban Design Ideals and Action**

Same subject as 4.247[]

Prereq: None

Acad Year 2018-2019: G (Spring)

Acad Year 2019-2020: Not offered

2-0-7 units

Examines the relationship between urban design ideals, urban design action, and the built environment through readings, discussions, presentations, and papers. Analyzes the diverse design ideals that influence cities and settlements, and investigates how urban designers use them to shape urban form. Provides a critical understanding of the diverse formal methods used to intervene creatively in both developed and developing contexts, especially pluralistic and informal built environments.

*B. Ryan*

**11.338 Urban Design Studio**

Prereq: 11.328[]]

Acad Year 2018-2019: Not offered

Acad Year 2019-2020: G (Spring)

0-12-9 units

Examines the rehabilitation and re-imagination of a city. Analyzes the city at three scales: citywide, neighborhood, and individual dwellings. Aims to shape innovative design solutions, enhance social amenity, and improve economic equity through strategic and creative geographical, urban design and architectural thinking. Intended for students with backgrounds in architecture, community development, and physical planning. Limited to 12 via application and lottery.

*B. Ryan*

**11.339 Downtown**

Subject meets with 11.026[]], 21H.321[]]

Prereq: None

G (Spring)

Not offered regularly; consult department

2-0-7 units

Seminar on downtown in US cities from the late 19th century to the late 20th. Emphasis on downtown as an idea, place, and cluster of interests, on the changing character of downtown, and on recent efforts to rebuild it. Topics considered include subways, skyscrapers, highways, urban renewal, and retail centers. Focus on readings, discussions, and individual research projects. Students taking graduate version complete additional assignments.

*R. M. Fogelson*

**11.344[]] Innovative Project Delivery in the Public and Private Sectors**

Same subject as 1.472[]]

Prereq: Permission of instructor

G (Spring; first half of term)

2-0-4 units

Develops a strong strategic understanding of how best to deliver various types of projects in the built environment. Examines the compatibility of various project delivery methods, consisting of organizations, contracts, and award methods, with certain types of projects and owners. Six methods examined: traditional general contracting; construction management; multiple primes; design-build; turnkey; and build-operate-transfer. Includes lectures, case studies, guest speakers, and a team project to analyze a case example.

*C. M. Gordon*

**11.345[]] Entrepreneurship in the Built Environment**

Same subject as 1.462[]]

Prereq: Permission of instructor

G (Fall; second half of term)

2-0-4 units

Develops skills necessary to incubate concepts into new products and services in the built environment, and to evolve those ideas into viable startup ventures. Addresses the progression of an idea, from inception to opportunity to sustainable business. Students develop a business model and a plan to launch their own business. Guest lecturers share their entrepreneurial paths and relevant qualitative and quantitative experience. Explores the role of entrepreneurs in developing/emerging markets, with a focus on solving social development challenges and innovating new development strategies/products, all within the built and human environment. Provides an ideal platform to prepare for the DesignX program.

*J. F. Kennedy*

**11.351 Real Estate Ventures I: Negotiating Development-Phase Agreements**

Prereq: None

G (Fall)

3-0-9 units

Focuses on key business and legal issues within the principal agreements used to control, entitle, capitalize, and construct a mixed-use real estate development. Through the lens of the real estate developer and its counter-parties, students identify, discuss, and negotiate the most important business issues in right of entry, purchase and sale, development, and joint-venture agreements, as well as a construction contract and construction loan agreement. Students work closely with attorneys who specialize in the construction of such agreements and with students from area law schools and Columbia University and New York University. Enrollment limited; preference to MSRED students. No listeners.

*W. T. McGrath*

**11.352 Real Estate Ventures II: Negotiating Leases, Financings, and Restructurings**

Prereq: None

G (Spring)

3-0-9 units

Focuses on key business and legal issues within the principal agreements used to lease, finance, and restructure a real estate venture. Through the lens of the real estate developer and its counter-parties, students identify, discuss and negotiate the most important business issues in office and retail leases, and permanent loan, mezzanine loan, inter-creditor, standstill/forbearance, and loan modification (workout) agreements. Students work closely with attorneys who specialize in the construction of such agreements and with students from area law schools and New York University and Columbia University. Single-asset real estate bankruptcy and the federal income tax consequences of debt restructuring are also addressed. Enrollment limited; preference to MSRED students; no Listeners.

*W. T. McGrath***11.353[J] Securitization of Mortgages and Other Assets**

Same subject as 15.429[J]

Prereq: 11.431[J], 15.401, or permission of instructor

G (Spring)

3-0-6 units

See description under subject 15.429[J].

*W. Torous***11.354 Real Estate Products Development**

Prereq: None

G (Fall)

3-0-9 units

Introduces core components of developing commercial real estate. Explores the process of developing, from initial site selection to site and design planning, entitlements, deal financing, and construction. Includes faculty and industry leader lectures, field trips, and group work on a real-time development case study.

*J. Cookke***11.355 International Housing Economics and Finance**

Prereq: 11.202, 11.203, 14.01, or permission of instructor

Acad Year 2018-2019: Not offered

Acad Year 2019-2020: G (Spring)

3-0-6 units

Credit cannot also be received for 11.145

Presents a theory of comparative differences in international housing outcomes. Introduces institutional differences in ways housing expenditures are financed, and economic determinants of housing outcomes (construction costs, land values, housing quality, ownership rates). Analyzes flow of funds to and from the different national housing finance sectors. Develops an understanding of the greater financial and macroeconomic implications of mortgage credit sector, and how policies affect ways housing asset fluctuations impact national economies. Considers perspective of investors in international real estate markets and risks and rewards involved. Draws on lessons from international comparative approach, applies them to economic and finance policies at the local, state/provincial, and federal levels within country of choice. Meets with 11.145 when offered concurrently. Students taking graduate version complete additional assignments.

*A. Saiz***11.356 Healthy Cities: Assessing Health Impacts of Policies and Plans**

Subject meets with 11.156

Prereq: None

G (Spring)

3-0-9 units

Examines the built, psychosocial, economic, and natural environment factors that affect health behaviors and outcomes. Introduces tools designed to integrate public health considerations into policymaking and planning. Provides extensive practical training in the application of health impact assessment (HIA) methodology, which brings a health lens to policy, budgeting, and planning debates. Emphasizes health equity and healthy cities. Students taking graduate version complete additional assignments. Limited to 30.

*M. Arcaya*

**11.360 Community Growth and Land Use Planning**

Prereq: Permission of instructor

G (Fall)

3-0-9 units

Practicum workshop on strategies of planning and control for growth and land use, chiefly at the municipal level. Growth and its local consequences; land use planning approaches; implementation tools including innovative zoning and regulatory techniques, physical design, and natural systems integration. Semester-long projects arranged with student teams serving municipal clients. Preference to MCP second year students.

*T. S. Szold*

**11.367 The Law and Politics of Land Use**

Prereq: Permission of instructor

Acad Year 2018-2019: Not offered

Acad Year 2019-2020: G (Spring)

3-0-9 units

Analysis of local and state power to regulate land use and development. Particular emphasis on the evolution of planning and zoning regulations, and the perceived narrowing of the relationship between public improvements requirements and development impact. The ability of regulatory bodies to impose environmental performance standards and limit development activity is explored in relation to recent Supreme Court and State SJC decisions.

Development decisions rendered by public agencies are reviewed, critiqued, and discussed.

*T. S. Szold*

**11.368 Environmental Justice: Law and Policy**

Subject meets with 11.148

Prereq: Permission of instructor

Acad Year 2018-2019: Not offered

Acad Year 2019-2020: G (Fall)

3-0-9 units

Introduces frameworks for analyzing and addressing inequalities in the distribution of environmental benefits and burdens. Explores the foundations and principles of the environmental justice movement from the perspectives of social science, public policy, and law.

Applies environmental justice principles to contemporary issues in urban policy and planning.

*Staff*

**11.371[] Sustainable Energy**

Same subject as 1.818[], 2.65[], 10.391[], 22.811[]

Subject meets with 2.650[], 10.291[], 22.081[]

Prereq: Permission of instructor

G (Fall)

3-1-8 units

See description under subject 22.811[].

*M. W. Golay*

**11.373[] Science, Politics, and Environmental Policy**

Same subject as 12.885[]

Subject meets with 12.385

Prereq: Permission of instructor

Acad Year 2018-2019: G (Fall)

Acad Year 2019-2020: Not offered

3-0-6 units

See description under subject 12.885[].

*S. Solomon, J. Knox-Hayes*

**11.376 Urban Sustainability in Action**

Prereq: Permission of instructor

G (Spring)

Not offered regularly; consult department

3-0-9 units

Considers the theory and practice of urban sustainability. Introduces concepts of environmental sustainability, systems dynamics, ecological footprints, and environmental indicators. Investigates cutting-edge practices of cities in the US and around the world.

Drawing on those examples, students work in and around the City of Boston on local sustainability initiatives.

*Staff*

**11.377 Food Systems and the Environment**

Prereq: Permission of instructor

G (Fall)

Not offered regularly; consult department

3-0-9 units

Explores the evolution of food production in the US and globally. Considers the science, economics, and politics behind the transition from pre-industrial to an industrial food system. Debates the costs and benefits of genetically modified food, organic agriculture, and local/regional food production. Focuses on the environmental sustainability and human-health consequences of different approaches, for both the developed and developing world.

*Staff*

**11.378[J] Water Planning, Policy, and Design**

Same subject as 4.625[J]

Prereq: Permission of instructor

Acad Year 2018-2019: Not offered

Acad Year 2019-2020: G (Fall)

Units arranged

Can be repeated for credit.

See description under subject 4.625[J]. Limited to 15.

*J. Wescoat*

**11.380 Urban Climate Adaptation**

Prereq: Permission of instructor

G (Spring)

Not offered regularly; consult department

3-0-9 units

Examines the challenges cities face and strategies to prepare for the impacts of climate change. Particular attention to the needs of vulnerable populations and resource-constrained cities, global and national adaptation policies and funding mechanisms, and ways in which local government and community-based activities can promote climate-readiness.

*Staff*

**11.381 Infrastructure Systems in Theory and Practice**

Prereq: (14.01 and (11.202 or 11.203)) or permission of instructor

G (Fall)

3-0-9 units

Examines theories of infrastructure from science and technology studies, history, economics, and anthropology in order to understand the prospects for change for many new and existing infrastructure systems. Examines how these theories are then implemented within systems in the modern city, including but not limited to, energy, water, transportation, and telecommunications infrastructure. Seminar is conducted with intensive group research projects, in-class discussions and debates.

*D. Hsu*

**11.382 Water Diplomacy: The Science, Policy, and Politics of Managing Shared Resources**

Prereq: Permission of instructor

Acad Year 2018-2019: Not offered

Acad Year 2019-2020: G (Spring)

3-0-9 units

Examines the history and dynamics of international environmental treaty-making, or what is called environmental diplomacy. Emphasizes climate change and other atmospheric, marine resource, global waste management and sustainability-related treaties and the problems of implementing them. Reviews the legal, economic, and political dynamics of managing shared resources, involving civil society on a global basis, and enforcing transboundary agreements. Focuses especially on principles from international relations, international law, environmental management, and negotiation theory as they relate to common-pool resource management.

*L. Susskind*

**11.383[J] Managing Sustainable Businesses for People and Profits**

Same subject as 15.662[J]

Prereq: None

G (Spring)

3-3-3 units

See description under subject 15.662[J].

*T. Kochan, B. Dyer*

**11.384 Preparation for Malaysia Sustainable Cities Fieldwork**

Prereq: Permission of instructor

G (Fall; second half of term)

Not offered regularly; consult department

0-0-3 units

Under faculty supervision, students conduct independent research to familiarize themselves with the culture, economy, politics, geography, ecology, and history of Malaysia. Selection by application.

*L. Susskind*

**11.385 Malaysia Sustainable Cities Fieldwork**

Prereq: 11.384

G (IAP)

Not offered regularly; consult department

3-0-3 units

Investigates sustainable development efforts of regional development agencies in Penang, Kuala Lumpur, or Johor Bahru. In addition to these sites, students visit the government city of Putrajaya, the World Heritage cities of George Town in Penang and Malacca, and Kuching in East Malaysia. Selection by application.

*L. Susskind*

**11.386 Malaysia Sustainable Cities Practicum**

Prereq: 11.385

G (Spring; partial term)

Not offered regularly; consult department

2-0-1 units

Examines examples of city development that reflect a commitment to the principles of sustainability, including economic development that ensures ecological sustainability, strategies for addressing intercultural tensions, and environmental quality improvements catalyzed by city development.

*L. Susskind*

**11.387 Environmental Finance and Political Economy**

Prereq: Permission of instructor

Acad Year 2018-2019: Not offered

Acad Year 2019-2020: G (Fall)

3-0-9 units

Examines the sociopolitical, cultural and economic dimensions of the financialization of environmental goods and services. Provides an introduction to key financial terms, practices, and institutions; analyzes the logics and origins of environmental finance, as well as the operation and implications of particular systems such as carbon-trading, REDD and ecosystem service pricing and swapping. Limited to 15.

*J. Knox-Hayes*

**11.401 Introduction to Housing, Community and Economic Development**

Prereq: None

G (Fall)

3-0-9 units

Provides a critical introduction to the shape and determinants of political, social, and economic inequality in America. Explores the role of the city in visions of justice. Analyzes the historical, political, and institutional contexts of housing and community development policy in the U.S., including federalism, municipal fragmentation, and decentralized public financing. Reviews major themes in U.S. housing policy, such as private housing finance, public housing policy, state and local housing affordability mechanisms. Reviews major themes in community economic development, including drivers of economic inequality, small business policy, employment policy, and cooperative economics.

*J. Steil*

**11.402 Urban Politics: Race and Political Change**

Prereq: None

G (Fall)

Not offered regularly; consult department

3-0-9 units

Examines the place of US cities in political theory and practice. Particular attention given to contemporary issues of racial polarization, demographic change, poverty, sprawl, and globalization. Specific cities are a focus for discussion.

*J. P. Thompson*

**11.403 Urban China Research Seminar**

Prereq: Permission of instructor

G (Fall)

2-0-7 units

Can be repeated for credit.

Examines the behavioral foundations and key policy issues of urban development, real estate markets, and sustainability in China. Discusses urban agglomeration economies, place-based investment, and urban vibrancy; economic geography of innovation and entrepreneurship; real estate dynamics and housing policies; land use and transportation; and urban quality of life and green cities, focusing on China but with some international comparisons.

*S. Zheng*



**11.404 Housing Policy and Planning in the US and Abroad**

Prereq: None

G (Spring)

Not offered regularly; consult department

3-0-9 units

Explores the policy tools and planning techniques used to formulate and implement housing strategies at local, state and federal levels. Topics include America's housing finance system and the causes of instability in mortgage markets; economic and social inequity in access to affordable housing; approaches to meeting community housing needs through local and state planning programs; programs for addressing homelessness; and emerging ideas about sustainable development and green building related to housing development and renovation. Introduces comparative policy approaches from other countries.

*Staff***11.405 Political Economy & Society**

Prereq: Permission of instructor

G (Fall)

Not offered regularly; consult department

3-0-6 units

Focuses on the connection (or not) between mind (theory) and matter (lived experience). Examines basic tenets of classical and recent political economic theories and their explication in ideas of market economies, centrally planned economies, social market economies, and co-creative economies. Assesses theories according to their relation to the lived experiences of people in communities and workplaces.

*J. P. Thompson***11.407 Economic Development Tools and Techniques**

Prereq: Permission of instructor

Acad Year 2018-2019: G (Spring)

Acad Year 2019-2020: Not offered

3-0-9 units

Introduces a suite of tools representing the basic set of practices used in the development field. Presents a wealth creation framework that focuses on place, improving livelihoods, incentivizing collaboration, creating multiple forms of wealth, and promoting local ownership. Students work with web-based tools designed for use in a professional setting. Discussions are based on results from tools, their interpretation, and their meaning. Relevant to all students interested in the structure and function of local, state, national and international economic contexts. Students develop a series of memos as students they complete assignments.

*A. Glasmeier***11.409 The Institutions of Modern Capitalism: States and Markets (New)**

Prereq: None

G (Spring)

3-0-9 units

Investigates the relationship between states and markets in the evolution of modern capitalism. Critically assesses the rise of what Karl Polanyi and Albert Hirschman have referred to as "market society:" a powerful conceptual framework that views the development of modern capitalism not as an outcome of deterministic economic and technological forces, but rather as the result of contingent social and political processes. Exposes students to a range of conceptual tools and analytic frameworks through which to understand the politics of economic governance and to consider the extent to which societal actors can challenge its limits and imagine alternative possibilities. Sub-themes vary from year to year and have focused on urban futures, markets and morality, and the global financial crisis. Limited to 25.

*J. Jackson***11.427[J] Urban Labor Markets and Employment Policy**

Same subject as 15.677[J]

Prereq: Permission of instructor

Acad Year 2018-2019: G (Spring)

Acad Year 2019-2020: Not offered

3-0-9 units

See description under subject 15.677[J].

*P. Osterman***11.430[J] Leadership in Real Estate**

Same subject as 15.941[J]

Prereq: None

G (Fall; first half of term)

3-0-3 units

See description under subject 15.941[J]. Limited to 15.

*G. Schuck***11.431[J] Real Estate Finance and Investment**

Same subject as 15.426[J]

Prereq: Permission of instructor

G (Fall)

4-0-8 units

Concepts and techniques for analyzing financial decisions in commercial property development and investment. Topics include property income streams, urban economics, discounted cash flow, equity valuation, leverage and income tax considerations, development projects, and joint ventures. Limited to graduate students.

*D. Geltner*

**11.432[J] Real Estate Capital Markets**

Same subject as 15.427[J]

Prereq: 11.431[J] and (15.402 or 15.414)

G (Spring; first half of term)

2-0-4 units

Introduces real estate capital markets for institutional investors. Topics include real estate investment trusts (REIT), commercial mortgage-backed securities (CMBS), and private equity. Concepts and techniques for investment analysis include portfolio theory and equilibrium asset pricing. Additional topics may include price indexing and derivatives. Focuses primarily on aggregates of many properties: portfolios, firms, markets, industries. Relates macro-level capital markets topics to micro-level bricks-and-mortar of real estate development projects in a direct and concrete manner.

*D. Geltner*

**11.433[J] Real Estate Economics**

Same subject as 15.021[J]

Prereq: 14.01, 15.010, or 15.011

G (Fall)

4-0-8 units

Develops understanding of the fundamental economic factors that shape the market for real property, as well as the influence of capital markets in asset pricing. Analyzes of housing as well as commercial real estate. Covers demographic analysis, regional growth, construction cycles, urban land markets, and location theory. Exercises and modeling techniques for measuring and predicting property demand, supply, vacancy, and prices.

*W. C. Wheaton*

**11.434[J] Tools for Analysis: Design for Real Estate and Infrastructure Development**

Same subject as 15.428[J], IDS.720[J]

Prereq: None

G (Spring; second half of term)

2-0-4 units

Introduction to analytical tools to support design and decision-making in real estate, infrastructure development, and investment. Particular focus on identifying and valuing sources of flexibility using "real options," Monte-Carlo simulation, and other techniques from the field of engineering systems. Integrates economic and engineering perspectives, and is suitable for students with various backgrounds. Provides useful preparation for thesis work in the area.

*D. Geltner, R. de Neufville*

**11.435 Mixed-Income Housing Development**

Prereq: None

G (Spring; first half of term)

4-0-8 units

Provides an overview of affordable and mixed-income housing development for students who wish to understand the fundamental issues and requirements of urban scale housing development, and the process of planning, financing and developing such housing. Students gain practical experience assembling a mixed-income housing development proposal.

*P. Roth*

**11.436 Housing Studio: Neighborhood Sustainability Plan**

Prereq: 11.301[J], 11.401, or 11.601

G (Spring)

Not offered regularly; consult department

6-0-9 units

Explores ways to improve housing quality and affordability, increase energy savings, and promote transportation access as part of a neighborhood sustainability plan. Students work with a local client to define the terms of local sustainability for a specific Boston neighborhood, then design an appropriate framework for action for the target site focusing on existing and future housing needs, community services, transit connections, and energy policy.

*Staff*

**11.437 Financing Economic Development**

Subject meets with 11.137

Prereq: None

G (Fall)

4-0-8 units

Focuses on financing tools and program models to support local economic development. Provides an overview of private capital markets and financing sources to understand capital market imperfections that constrain economic development, business accounting, financial statement analysis, federal economic development programs, and public finance tools. Covers policies and program models, including revolving loan funds, guarantee programs, venture capital funds, bank holding companies, community development loan funds and credit unions, micro enterprise funds, and the Community Reinvestment Act. Students taking graduate version complete additional assignments. Limited to 25.

*K. Seidman*

**11.438 Economic Development Planning**

Prereq: 11.203, 11.220, and permission of instructor

Acad Year 2018-2019: Not offered

Acad Year 2019-2020: G (Spring)

3-0-9 units

Focuses on the policy tools and planning techniques used to formulate and implement local economic development strategies. Includes an overview of economic development theory, discussion of major policy areas and practices employed to influence local economic development, a review of analytic tools to assess local economies and how to formulate strategy. Coursework includes formulation of a local economic development strategy for a client. Limited to 15.

*K. Seidman*

**11.439 Revitalizing Urban Main Streets**

Prereq: (11.301[]), 11.328[], or 11.401) and permission of instructor

Acad Year 2018-2019: G (Spring)

Acad Year 2019-2020: Not offered

4-0-11 units

Workshop explores the integration of economic development and physical planning interventions to revitalize urban commercial districts. Covers: an overview of the causes of urban business district decline, revitalization challenges, and the strategies to address them; the planning tools used to understand and assess urban Main Streets from both physical design and economic development perspectives; and the policies, interventions, and investments used to foster urban commercial revitalization. Students apply the theories, tools and interventions discussed in class to preparing a formal neighborhood commercial revitalization plan for a client business district. Limited to 15.

*K. Seidman, M. A. Ocampo*

**11.444[] The New Global Planning Practitioner**

Same subject as 4.232[]

Prereq: Permission of instructor

G (Spring)

3-0-6 units

See description under subject 4.232[].

*R. Goethert*

**11.450 Real Estate Development Building Systems**

Prereq: None

G (Fall; first half of term)

2-0-1 units

Provides students with a concise overview of the range of building systems that are encountered in professional commercial real estate development practice in the USA. Focuses on the relationship between real estate product types, building systems, and the factors that real estate development professionals must consider when evaluating these products and systems for a specific development project. Surveys commercial building technology including Foundation, Structural, MEP/FP, Envelope, and Interiors systems and analyzes the factors that lead development professionals to select specific systems for specific product types. One or more field trips to active construction sites may be scheduled during non-class hours based on student availability.

*Y. Tsipis*

**11.452 Planning against Evictions and Displacement (New)**

Prereq: None

Acad Year 2018-2019: Not offered

Acad Year 2019-2020: G (Spring)

3-0-9 units

Combines state-of-the-art research on evictions and displacement globally (in the context of the global crisis of evictions, land grabbing, and gentrification) with the study of policy and practical responses to displacement, assisted by selected case studies. First half covers explanations about the mechanisms and drivers of displacement, while the second half introduces and evaluates policy and legal responses developed by many actors. Analyzes the use of UN and national standards on displacement as well as the use of tools such as the Eviction Impact Assessment Tool. Limited to 15 graduate students.

*B. Rajagopal*

**11.454 Big Data, Visualization, and Society (New)**

Subject meets with 11.154

Prereq: None

G (Spring)

3-0-9 units

Studies data visualization as a way for architects, planners and policy experts to communicate with the public. Develops technical skills to work with big data to answer or expose urban issues, which include cleaning and aggregating data in python, D3, and other web-based visualization software, and accessing APIs to download data. Students work with a big data set in a particular urban area and use the data to answer a policy question. Students taking graduate version complete additional assignments.

*S. Williams*

**11.455 Financial Decision Making in Real Estate and Other Markets**

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

Provides a rigorous introduction to the fundamentals of modern finance including valuation, risk analysis and investment decisions. Where possible, applications and examples drawn from real estate and mortgage markets.

*W. N. Torous*

**11.457 More than Data: Smart Cities, Big Data, Civic Technology and Policy**

Prereq: None  
 Acad Year 2018-2019: Not offered  
 Acad Year 2019-2020: G (Spring)  
 3-0-6 units

Discussions of future directions in the 'smart cities' debate. Begins by framing the current smart city with past trends such as the efficient city movement of the 1930s and the Modernist city of the 1950s and 60s. Examines current trends in big data, civic apps, Code for America, the open data movement, DIY data collections devices, and their policy impacts.

*S. Williams*

**11.458 Crowd Sourced City: Civic Tech Prototyping Class**

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

Investigates the use of social medial and digital technologies for planning and advocacy by working with actual planning and advocacy organizations to develop, implement, and evaluate prototype digital tools. Students use the development of their digital tools as a way to investigate new media technologies that can be used for planning.

*S. Williams*

**11.460 Development, Planning, and Implementation: The Dialectic of Theory and Practice (New)**

Prereq: None  
 Acad Year 2018-2019: Not offered  
 Acad Year 2019-2020: G (Spring)  
 3-0-9 units

Advanced seminar analyzes the effectiveness of developmental and planning theories. Aims to create a new planning sensibility which theorizes from practice, and to create a new conceptualization of the developmental process from the point of view of practitioners who must transcend conventional thinking to implement projects and policies. Organized around twelve implementation puzzles which should be considered for rethinking developmental planning processes. Review of conventional theories of development, urbanization and planning set the stage for critical reviews of how such theories actually influence practice.

*B. Sanyal*

**11.461[J] Technocracy**

Same subject as STS.463[J]  
 Prereq: None  
 Acad Year 2018-2019: Not offered  
 Acad Year 2019-2020: G (Fall)  
 3-0-9 units

See description under subject STS.463[J].

*J. S. Light*

**11.463[J] Structuring Low-Income Housing Projects in Developing Countries**

Same subject as 4.236[J]  
 Prereq: Permission of instructor  
 G (Fall)  
 3-0-9 units

See description under subject 4.236[J].

*R. Goethert*

**11.466[J] Technology, Globalization, and Sustainable Development**

Same subject as 1.813[J], 15.657[J], IDS.437[J]  
 Prereq: Permission of instructor  
 G (Fall)  
 3-0-9 units

See description under subject IDS.437[J].

*N. Ashford*

**11.468[J] SIGUS Workshop**

Same subject as 4.230[]]  
 Subject meets with 4.231  
 Prereq: Permission of instructor  
 Acad Year 2018-2019: Not offered  
 Acad Year 2019-2020: G (Fall)  
 Units arranged  
 Can be repeated for credit.

See description under subject 4.230[]].

*R. Goethert*

**11.469 Urban Sociology in Theory and Practice**

Prereq: Permission of instructor  
 Acad Year 2018-2019: Not offered  
 Acad Year 2019-2020: G (Spring)  
 3-0-9 units

Introduction to core writings in urban sociology. Explores the nature and changing character of the city and the urban experience, providing context for the development of urban studies research and planning skills. Topics include the changing nature of community, neighborhood effects, social capital and networks, social stratification, feminist theory and critical race theory, and the interaction of social structure and political power. Subject will take place in the Massachusetts Correctional Institution at Norfolk with half of the class from MIT and half of the class from MCI-Norfolk. Limited to 25.

*J. Steil*

**11.470 The Politics of Development Policy**

Prereq: Permission of instructor  
 G (Fall)  
 Not offered regularly; consult department  
 3-0-9 units

Examines the political forces and conditions that affect urban, regional, and national development policymaking. Key protagonists include political parties, state actors, social movements, NGOs (domestic and global), business groups, and labor organizations, both formal and informal. Primary emphasis is the developing world, but seeks parallels across a variety of comparative and historical contexts.

*Staff*

**11.472[J] D-Lab: Development**

Same subject as EC.781[]]  
 Subject meets with 11.025[]], EC.701[]]  
 Prereq: None  
 G (Fall)  
 3-2-7 units

See description under subject EC.781[]]. Enrollment limited by lottery; must attend first class session.

*S. L. Hsu, A. B. Smith, B. Sanyal*

**11.474 D-Lab: Water, Sanitation and Hygiene**

Subject meets with EC.715  
 Prereq: None  
 G (Fall)  
 3-0-9 units

Focuses on disseminating Water, Sanitation and Hygiene (WASH) or water/environment innovations in developing countries and underserved communities worldwide. Structured around field-based learning, case studies, lectures and videos in which teams propose an idea and are mentored through the process of bringing that innovation to fruition. Emphasizes core WASH and water/environment principles, culture-specific solutions, tools for start-ups, appropriate and sustainable technologies, behavior change, social marketing, building partnerships, and the theory and practice of innovation diffusion. Term project entails entering the IDEAS or other competition(s) while implementing a WASH innovation in a specific locale. Guest lectures on specific real-world WASH projects which have been disseminated by MIT faculty, students, alumni, and others. Students taking graduate version complete additional assignments. Limited to 30.

*S. E. Murcott, S. L. Hsu*

**11.475 Navigating Power in Water and Sanitation Planning**

Prereq: Open to undergraduates with permission of instructor

Acad Year 2018-2019: G (Spring)

Acad Year 2019-2020: Not offered

3-0-9 units

Informs and prepares students to navigate the explicit and implicit power dynamics among stakeholders in decision-making processes that govern the planning and delivery of water and sanitation systems. Through investigations of organization, regulation, financing, physical delivery, and research designs, students examine the trajectory of decisions that shape and influence the accessibility, affordability, and adequacy of water and sanitation services, particularly in vulnerable neighborhoods in mostly urban and peri-urban areas. Emphasis is placed on the importance of moving beyond the limited dimensions of supply and demand studies and gaining fluency in the multiplicative political-economic and social factors driving choices in water and sanitation systems planning. In-depth, globally comparative readings inform the course, and expose basic services in water and sanitation as a misnomer.

*G. Carolini*

**11.476 Urbanizing China**

Subject meets with 11.146

Prereq: Permission of instructor

G (Fall)

Not offered regularly; consult department

2-0-7 units

Discusses China's daunting urban challenges: congestion and smog, housing affordability, land reform and urban financing, migrants and locals, and social and spatial inequality. Provides examples of laudable achievements and diverse and innovative responses across more than six hundred cities. Presents China's urbanization as the joint result of natural socioeconomic processes and conscious actions by governments, markets, and the public. Presents multidisciplinary approaches and alternative narratives. Examines the intricate interaction between state and market in China's context, yielding a variety of state-market 'cocktails' devised and experimented in different cities in response to local problems, each involving a multilayered projection onto urban space. Students taking graduate version complete additional assignments.

*J. Zhao*

**11.477[J] Urban Energy Systems and Policy**

Same subject as 1.286[J]

Subject meets with 11.165

Prereq: 11.203, 14.01, or permission of instructor

Acad Year 2018-2019: Not offered

Acad Year 2019-2020: G (Fall)

3-0-9 units

Examines efforts in developing and advanced nations and regions. Examines key issues in the current and future development of urban energy systems, such as technology, use, behavior, regulation, climate change, and lack of access or energy poverty. Case studies on a diverse sampling of cities explore how prospective technologies and policies can be implemented. Includes intensive group research projects, discussion, and debate.

*D. Hsu*

**11.478 Behavior and Policy: Connections in Transportation**

Subject meets with 11.158

Prereq: Permission of instructor

G (Spring)

3-0-9 units

Examines the behavioral foundation for policy design using urban transportation examples. Introduces multiple frameworks for understanding behavior while contrasting the perspectives of classic economic theory with behavioral economics and social psychology. Suggests corresponding policy interventions and establishes a mapping across behavior, theory, and policy. Presents a spectrum of instruments for positively influencing behavior and improving welfare. Challenges students to critique, design, implement and interpret experiments that nudge travel behavior. Brings behavioral insights to creative design of transport policies that are efficient and equitable as well as simple, consistent, transparent, acceptable, and adaptive to behavioral changes. Students taking graduate version complete additional assignments.

*J. Zhao*

**11.480 Urbanization and Development**

Subject meets with 11.140

Prereq: None

G (Spring)

Not offered regularly; consult department

3-0-9 units

Examines developmental dynamics of rapidly urbanizing locales, with a special focus on the developing world. Case studies from India, China, Mexico, Brazil, and South Africa form the basis for discussion of social, spatial, political and economic changes in cities spurred by the decline of industry, the rise of services, and the proliferation of urban mega projects. Emphasizes the challenges of growing urban inequality, environmental risk, citizen displacement, insufficient housing, and the lack of effective institutions for metropolitan governance. Students taking graduate version complete additional assignments.

*Staff*

**11.481[J] Analyzing and Accounting for Regional Economic Change**

Same subject as 1.284[J]

Prereq: 14.03 and 14.04

G (Spring)

Not offered regularly; consult department

3-0-9 units

Surveys theories of regional growth, factor mobility, clustering, industrial restructuring, learning regions, and global supply chains from a political-economy perspective. Examines/critiques multipliers, linkages, and supply chains used to assess employment and environmental impacts, energy and infrastructure investments, and accounting issues related to the underground economy, work in the home, and environmental degradation. Assesses price indices, industrial location and employment measures, and shift-share analyses. Discussions of US and foreign applications.

*Staff*

**11.482[J] Regional Socioeconomic Impact Analyses and Modeling**

Same subject as 1.285[J]

Prereq: 11.481[J] or permission of instructor

G (Fall)

Not offered regularly; consult department

2-1-9 units

Reviews regional economic theories and models and provides students with experience in using alternative economic impact assessment models on microcomputers. Problem sets are oriented around infrastructure, housing, energy, and environmental issues. Students work with a client generally in Boston and make a presentation to the client. Emphasis on written and oral presentation skills.

*K. R. Polenske*

**11.483 Housing and Land Use in Rapidly Urbanizing Regions**

Prereq: Permission of instructor

G (Spring)

Not offered regularly; consult department

3-0-9 units

Studies current urban controversies over affordable housing, land redevelopment, and public space, with special attention to property rights. Reviews how law, economics, sociology and planning theories frame these issues and interplays them with spatial approaches of urban design and geography. Explores cases that use property rights strategies to increase economic growth and social justice, providing insight for future design and policymaking. Topics include land trusts for affordable housing, mixed-use public space, and critical cartography.

*Y. Hong*

**11.484 Project Appraisal in Developing Countries**

Subject meets with 11.144

Prereq: Permission of instructor

G (Spring)

Not offered regularly; consult department

3-0-9 units

Covers techniques of financial analysis of investment expenditures, as well as the economic and distributive appraisal of development projects. Critical analysis of these tools in the political economy of international development is discussed. Topics include appraisal's role in the project cycle, planning under conditions of uncertainty, constraints in data quality and the limits of rational analysis, and the coordination of an interdisciplinary appraisal team. Students taking graduate version complete additional assignments. Enrollment limited; preference to majors.

*Y. Hong*

**11.485 Southern Urbanisms (New)**

Prereq: None

Acad Year 2018-2019: G (Spring)

Acad Year 2019-2020: Not offered

2-0-10 units

Guides students in examining implicit and explicit values of diversity offered in "Southern" knowledge bases, theories, and practices of urban production. With a focus on Sub-Saharan Africa, considers why the South-centered location of the estimated global urban population boom obligates us to examine how cities work as they do, and why Western-informed urban theory and planning scholarship may be ill-suited to provide guidance on urban development there. Examines the "rise of the rest" and its implications for the making and remaking of expertise and norms in planning practice. Students engage with seminal texts from leading authors of Southern urbanism and critical themes, including the rise of Southern theory, African urbanism, Chinese international cooperation, Brazilian urban diplomacy, and the globally-driven commodification of urban real estate.

*G. Carolini*

**11.487 Budgeting and Finance for the Public Sector**

Subject meets with 11.147

Prereq: None

Acad Year 2018-2019: Not offered

Acad Year 2019-2020: G (Spring)

3-0-9 units

Examines globally relevant challenges of adequately and effectively attending to public sector responsibilities for basic services with limited resources. Particular attention to the contexts of fiscal crises and rapid population growth, as well as shrinkage, through an introduction to methods and processes of budgeting, accounting, and financial mobilization. Case studies and practice exercises explore revenue strategies, demonstrate fiscal analytical competencies, and familiarize students with pioneering examples of promising budget and accounting processes and innovative funding mobilization via taxation, capital markets, and other mechanisms (e.g., land-value capture). Students taking graduate version explore the subject in greater depth.

*G. Carolini*

**11.488 Urban Development in Conflict Cities: Planning Challenges and Policy Innovations**

Prereq: Permission of instructor

G (Fall)

Not offered regularly; consult department

3-0-9 units

Economic, religious, gender and ethnic differences must be negotiated every day in the urban arena. When tensions and conflict escalates into violence, the urban space becomes the battlespace in which these tensions are negotiated. Examines urban development challenges in conflict cities through multiple disciplinary perspectives on urban conflict. Review of the literature about when violence and cities intersect. Focuses on policy innovations, and an examination of potential planning, design, and policy solutions.

*Staff*

**11.490 Law and Development**

Prereq: Permission of instructor

Acad Year 2018-2019: Not offered

Acad Year 2019-2020: G (Spring)

2-0-10 units

Examines the role of law in development and introduces economic and legal theories. Topics include formality/informality of property, contracts and bargaining in the shadow of the law, institutions for transparency and accountability, legitimation of law, sequencing of legal reform, and international economic law aspects. Studies the roles of property rights in economic development, the judiciary and the bureaucracy in development, and law in aid policy. Includes selected country case studies. Limited to 15.

*B. Rajagopal*

**11.491[J] Economic Development and Policy Analysis**

Same subject as 17.176[J]

Prereq: 11.701

G (Fall)

Not offered regularly; consult department

3-0-9 units

Examines the process of economic development to understand why some countries or regions within countries have increased their incomes and reduced their poverty faster than others. Economic development is treated as a process of learning, as countries weigh theories and role models as guides for policy formulation and institution building. Historical and empirical examination of three role models for development/underdevelopment, as formulated by the Third World's new intelligentsia that emerged after de-colonization: the OPEC development role model, the East Asian role model, and the Brazilian role model.

*Staff*



**11.493 Property and Land Use Law for Planners**

Prereq: None

Acad Year 2018-2019: G (Fall)

Acad Year 2019-2020: Not offered

3-0-9 units

Examines legal and institutional arrangements for the establishment, transfer, and control over property and land under American and selected comparative systems, including India and South Africa. Focuses on key issues of property and land use law regarding planning and economic development. Emphasizes just and efficient resource use; institutional, entitlement and social relational approaches to property; distributional and other social aspects; and the relationship between property, culture, and democracy.

*B. Rajagopal***11.495 Governance and Law in Developing Countries**

Prereq: Permission of instructor

G (Fall)

Not offered regularly; consult department

2-0-10 units

Examines the multiple dimensions of governance in international development with a focus on the role of legal norms and institutions in the balance between state and the market. Analyzes changes in the distribution of political and legal authority as a result of economic globalization. Topics include the regulation of firms; forms of state and non-state monitoring; varieties of capitalism, global governance and development; and good governance, including transparency and accountability mechanisms, the role of the judiciary and legal culture, and tools for measuring governance performance.

*B. Rajagopal***11.496 Law, Social Movements, and Public Policy: Comparative and International Experience**

Subject meets with 11.166

Prereq: Permission of instructor

G (Spring)

Not offered regularly; consult department

3-0-9 units

Studies the interaction between law, courts, and social movements in shaping domestic and global public policy. Examines how groups mobilize to use law to affect change and why they succeed and fail. Case studies explore the interplay between law, social movements, and public policy in current issues, such as gender, race, labor, trade, climate change/environment, and LGBTQ rights. Introduces theories of public policy, social movements, law and society, and transnational studies. Students taking graduate version complete additional assignments. Limited to 15.

*B. Rajagopal***11.497 Human Rights at Home and Abroad**

Subject meets with 11.164[]], 17.391[]]

Prereq: None

Acad Year 2018-2019: Not offered

Acad Year 2019-2020: G (Fall)

2-0-10 units

Provides a rigorous and critical introduction to the history, foundation, structure, and operation of the human rights movement. Focuses on key ideas, actors, methods and sources, and critically evaluates the field. Addresses current debates in human rights, including the relationship with security, democracy, development and globalization, urbanization, equality (in housing and other economic and social rights; women's rights; ethnic, religious and racial discrimination; and policing/conflict), post-conflict rebuilding and transitional justice, and technology in human rights activism. Students taking graduate version expected to write a research paper.

*B. Rajagopal***11.499 Master of Science in Real Estate Development Thesis Preparation**

Prereq: None

G (Spring; first half of term)

2-0-1 units

Seminar provides students with a concise overview of the requirements for thesis writing and submission. Covers types of theses, COUHES requirements, formatting and submission requirements and stipulations. Culminates in submission of thesis proposal.

*Staff***11.520 Workshop on Geographic Information Systems**

Prereq: 11.205 or permission of instructor

G (Fall, Spring; partial term)

2-2-2 units

An introduction to geographic information systems (GIS) as applied to urban and regional planning, community development, and local government. Emphasis on learning GIS technology and spatial analysis techniques through extensive hands-on exercises using real-world data sets such as the US census of population and housing. Includes a small project on an urban planning problem involving the selection of appropriate methods, the use of primary and secondary data, computer-based modeling, and spatial analysis. Enrollment limited; preference to MCP students.

*S. Williams, J. Ferreira*

**11.521 Spatial Database Management and Advanced Geographic Information Systems**

Prereq: 11.205 and *Coreq: 11.220*; or permission of instructor  
 G (Spring)  
 3-3-6 units  
 Credit cannot also be received for 11.523, 11.524

Extends the computing and geographic information systems (GIS) skills developed in 11.520 to include spatial data management in client/server environments and advanced GIS techniques. First half covers the content of 11.523, introducing database management concepts, SQL (Structured Query Language), and enterprise-class database management software. Second half explores advanced features and the customization features of GIS software that perform analyses for decision support that go beyond basic thematic mapping. Includes the half-term GIS project of 11.524 that studies a real-world planning issue.

*J. Ferreira*

**11.522 Research Seminar on Urban Information Systems**

Prereq: 11.521 or permission of instructor  
 G (Fall)  
 2-4-6 units  
 Can be repeated for credit.

Advanced research seminar enhances computer and analytic skills developed in other subjects in this sequence. Students present a structured discussion of journal articles representative of their current research interests involving urban information systems and complete a short research project. Suggested research projects include topics related to ongoing UIS Group research.

*J. Ferreira*

**11.523 Fundamentals of Spatial Database Management**

Prereq: Permission of instructor  
 G (Spring; first half of term)  
 2-2-2 units  
 Credit cannot also be received for 11.521, 11.524

The fundamentals of database management systems as applied to spatial analysis. Includes extensive hands-on exercises using real-world planning data. Introduces database management concepts, SQL (Structured Query Language), and enterprise-class database software. Same content as first half of 11.521.

*J. Ferreira*

**11.524 Advanced Geographic Information System Project**

Prereq: 11.523 or permission of instructor  
 G (Spring; second half of term)  
 Units arranged  
 Can be repeated for credit. Credit cannot also be received for 11.521, 11.523

Learning and utilizing advanced geographic information system techniques in studio/lab setting with real-world client problem and complex digital spatial data infrastructure. Projects typically use the client and infrastructure setting for 11.521. Credit cannot also be received for 11.521 in the same term.

*J. Ferreira*

**11.526[] Comparative Land Use and Transportation Planning**

Same subject as 1.251[]  
 Prereq: Permission of instructor  
 G (Spring)  
 3-0-9 units

Focuses on the integration of land use and transportation planning, drawing from cases in both industrialized and developing countries. Reviews underlying theories, analytical techniques, and the empirical evidence of the land use-transportation relationship at the metropolitan, intra-metropolitan, and micro-scales. Also covers the various ways of measuring urban structure, form, and the "built environment." Develops students' skills to assess relevant policies, interventions and impacts.

*C. Zegras*

**11.527 Advanced Seminar in Transportation Finance**

Prereq: Permission of instructor  
 Acad Year 2018-2019: Not offered  
 Acad Year 2019-2020: G (Fall)  
 2-1-9 units

Focuses on the theory and practice of transportation system finance, examining the range of relevant topics including basic public finance, politics, institutional structures, externalities, pricing, and the role of advanced technologies. Primarily oriented around land-based, surface transportation, although in their research students are welcome to examine air and maritime modes according to their interests. Explores issues across a range of contexts, including North America, Europe, Latin America, and Asia.

*C. Zegras*

**11.533 Ecological Planning with GIS**

Prereq: 11.205

G (Spring)

Not offered regularly; consult department

3-3-6 units

Provides a practical introduction to spatial environmental assessment and planning methods, from landscape to regional scales. Lectures and discussions focus on key concepts in landscape ecology as well as the data and methods needed to incorporate these concepts in environmental planning. Weekly lab exercises demonstrate how natural systems are represented in modern geographic information systems, how to synthesize information using overlay analysis and suitability modeling, and design methods that build on the resulting syntheses. Features raster GIS analysis methods.

*Staff***11.543[J] Transportation Policy, the Environment, and Livable Communities (New)**

Same subject as 1.253[J]

Prereq: Permission of instructor

G (Fall)

3-0-9 units

Examines the economic and political conflict between transportation and the environment. Investigates the role of government regulation, green business and transportation policy as a facilitator of economic development and environmental sustainability. Analyzes a variety of international policy problems, including government-business relations, the role of interest groups, non-governmental organizations, and the public and media in the regulation of the automobile; sustainable development; global warming; politics of risk and siting of transport facilities; environmental justice; equity; as well as transportation and public health in the urban metropolis. Provides students with an opportunity to apply transportation and planning methods to develop policy alternatives in the context of environmental politics. Students taking graduate version complete additional assignments.

*J. Coughlin***11.544[J] Transportation Systems Analysis: Performance and Optimization**

Same subject as 1.200[J]

Prereq: 1.010 and permission of instructor

G (Fall)

3-1-8 units

See description under subject 1.200[J].

*C. Osorio***11.545[J] Transportation Systems Analysis: Demand and Economics**

Same subject as 1.201[J]

Prereq: Permission of instructor

G (Fall)

3-1-8 units

See description under subject 1.201[J].

*Staff***11.601 Introduction to Environmental Policy and Planning**

Prereq: None

G (Fall)

3-0-9 units

Required introductory subject for graduate students pursuing environmental policy and planning as their specialization in the MCP Program. Also open to other graduate students interested in environmental policymaking and the practice of environmental planning. Taught comparatively, with numerous references to examples from around the world. Four major areas of focus: National Environmental Policymaking, Environmental Ethics, Environmental Forecasting and Analysis Techniques, and Strategies for Collaborative Decision-making.

*L. Susskind***11.630[J] Environmental Law, Policy, and Economics: Pollution Prevention and Control**

Same subject as 1.811[J], 15.663[J], IDS.540[J]

Subject meets with 1.801[J], 11.021[J], 17.393[J], IDS.060[J]

Prereq: None

G (Fall)

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*

**11.631[J] Regulation of Chemicals, Radiation, and Biotechnology**

Same subject as 1.812[J], IDS.541[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*

**11.701 Introduction to International Development Planning**

Prereq: None

G (Fall)

3-0-9 units

Studies interactions between planners and institutions at different scales, from local to global/transnational. Emphasizes historical and institutional approaches to development planning. Includes an overview of theories of development, actors, organizational arrangements, and implementation mechanisms. Covers current topics in development planning, such as migration, participatory planning, urban-rural linkages, corruption, legal institutions and post-conflict development. Analyzes various roles planners play in different institutional contexts. Restricted to first-year MCP and SPURS students.

*B. Rajagopal*

**Tutorials, Research, and Fieldwork Subjects**

**11.800 Reading, Writing and Research**

Prereq: 11.233; Coreq: 11.801

G (Spring)

3-0-6 units

Required subject intended solely for 1st-year DUSP PhD students. Develops capacity of doctoral students to become independent scholars by helping them to prepare their first-year papers and plan for their dissertation work. Focuses on the process by which theory, research questions, literature reviews, and new data are synthesized into new and original contributions to the literature. Seminar is conducted with intensive discussions, draft writing, peer review, revisions, and editing. Guest speakers from faculty and advanced students discuss strategies and potential pitfalls with doctoral-level research.

*D. Hsu*

**11.801 Doctoral Research Paper**

Prereq: None. Coreq: 11.800; permission of instructor

G (Spring)

3-0-6 units

Students develop a first-year research paper in consultation with their advisor.

*Staff*

**11.901 Independent Study: Urban Studies and Planning**

Prereq: Permission of instructor

G (Fall, IAP, Spring)

Units arranged

Can be repeated for credit.

Opportunity for independent study under regular supervision by a faculty member.

*Staff*

**11.902 Independent Study: Urban Studies and Planning**

Prereq: Permission of instructor

G (Fall, IAP, Spring)

Units arranged [P/D/F]

Can be repeated for credit.

Opportunity for independent study under regular supervision by a faculty member.

*Staff*

**11.903 Supervised Readings in Urban Studies**

Prereq: Permission of instructor

G (Fall, IAP, Spring)

Units arranged [P/D/F]

Can be repeated for credit.

Reading and discussion of topics in urban studies and planning.  
*Staff*

**11.904 Supervised Readings in Urban Studies**

Prereq: Permission of instructor

G (Fall, Spring, Summer)

Units arranged

Can be repeated for credit.

Reading and discussion of topics in urban studies and planning.  
*Staff*

**11.905 Research Seminar in Urban Studies and Planning**

Prereq: Permission of instructor

G (Fall, IAP, Spring)

Units arranged

Can be repeated for credit.

Special research issues in urban planning.  
*Staff*

**11.906 Research Seminar in Urban Studies and Planning**

Prereq: None

G (Fall, IAP, Spring)

Units arranged [P/D/F]

Can be repeated for credit.

Special research issues in urban planning.  
*Staff*

**11.907 Urban Fieldwork**

Prereq: Permission of instructor

G (Fall, IAP, Spring)

Units arranged [P/D/F]

Can be repeated for credit.

Practical application of planning techniques to towns, cities, and regions, including problems of replanning, redevelopment, and renewal of existing communities. Includes internships, under staff supervision, in municipal and state agencies and departments.  
*Staff*

**11.908 Urban Fieldwork**

Prereq: None

G (Fall, IAP, Spring)

Units arranged

Can be repeated for credit.

Practical application of planning techniques to towns, cities, and regions, including problems of replanning, redevelopment, and renewal of existing communities. Includes internships, under staff supervision, in municipal and state agencies and departments.  
*Staff*

**11.909 Graduate Tutorial**

Prereq: None

G (Fall)

Units arranged [P/D/F]

Can be repeated for credit.

Planned programs of instruction for a minimum of three students on a planning topic not covered in regular subjects of instruction. Registration subject to prior arrangement with appropriate faculty member.  
*Staff*

**11.910 Doctoral Tutorial**

Prereq: None

G (Fall)

3-0-3 units

Required subject exclusively for first-year DUSP PhD candidates, but with multiple colloquium sessions open to the full department community. Introduces students to a range of department faculty (and others) by offering opportunities to discuss applications of planning theory and planning history. Assists in clarifying the departments intellectual diversity. Encourages development of a personal intellectual voice and capacity to synthesize and respond to the arguments made by others.

*L. Vale, J. Zhao*

**11.920 Planning in Practice**

Prereq: Permission of instructor

G (Fall, IAP, Spring, Summer)

Units arranged [P/D/F]

Can be repeated for credit.

Familiarizes students with the practice of planning, by requiring actual experience in professional internship placements. Requires students to both apply what they are learning in their classes in an actual professional setting and to reflect, using a variety of platforms, on the learning personal and professional - growing out of their internship experience. Through readings, practical experience and reflection, empirical observation, and contact with practitioners, students gain deeper general understanding of the practice of the profession.

*M. J. Daly*

**11.960 Independent Study: Real Estate**

Prereq: None

G (Fall, IAP, Spring, Summer)

Units arranged [P/D/F]

Can be repeated for credit.

Opportunity for independent study under regular supervision by a faculty member.

*Staff*

**11.961 Independent Study: Real Estate**

Prereq: None

G (Fall, IAP, Spring, Summer)

Units arranged

Can be repeated for credit.

Opportunity for independent study under regular supervision by a faculty member.

*Staff*

**11.962 Fieldwork: Real Estate**

Prereq: Permission of instructor

G (Fall, IAP, Spring, Summer)

Units arranged [P/D/F]

Can be repeated for credit.

Practical application of real estate techniques in the field.

*Staff*

**11.963 Independent Study: Real Estate**

Prereq: Permission of instructor

G (Fall, IAP, Spring, Summer)

Units arranged

Can be repeated for credit.

Opportunity for independent study under regular supervision by a faculty member.

*Staff*

**11.964 Independent Study: Real Estate**

Prereq: Permission of instructor

G (Fall, IAP, Spring, Summer)

Units arranged [P/D/F]

Can be repeated for credit.

Opportunity for independent study under regular supervision by a faculty member.

*Staff*

**11.985 Summer Field Work**

Prereq: None

G (Summer)

Units arranged [P/D/F]

Practical application of planning techniques over the summer with prior arrangement.

*S. Wellford*

**11.S938 Special Subject: Urban Studies and Planning**

Prereq: None

G (Fall, IAP, Spring)

Units arranged

Can be repeated for credit.

For graduate students wishing to pursue further study in advanced areas of urban studies and planning not covered in regular subjects of instruction.

*Staff*

**11.S939 Special Subject: Urban Studies and Planning**

Prereq: None

G (Fall, Spring)

Units arranged

Can be repeated for credit.

For graduate students wishing to pursue further study in advanced areas of urban studies and city and regional planning not covered in regular subjects of instruction.

*Staff*

**11.S940-11.S944 Special Subject: Urban Studies and Planning**

Prereq: Permission of instructor

G (Fall, Spring)

Units arranged

Can be repeated for credit.

For graduate students wishing to pursue further study in advanced areas of urban studies and city and regional planning not covered in regular subjects of instruction.

*M. Kothari***11.S945-11.S949 Special Subject: Urban Studies and Planning**

Prereq: Permission of instructor

G (Spring)

Units arranged

Can be repeated for credit.

For graduate students wishing to pursue further study in advanced areas of urban studies and city and regional planning not covered in regular subjects of instruction.

*Staff***11.S950-11.S957 Special Seminar: Urban Studies and Planning**

Prereq: Permission of instructor

G (Fall)

Units arranged [P/D/F]

Can be repeated for credit.

For graduate students wishing to pursue further study in advanced areas of urban studies and city and regional planning not covered in regular subjects of instruction

*Staff***11.S958 Special Seminar: Urban Studies and Planning**

Prereq: Permission of instructor

G (Spring)

Units arranged [P/D/F]

Can be repeated for credit.

For graduate students wishing to pursue further study in advanced areas of urban studies and city and regional planning not covered in regular subjects of instruction.

*Staff***11.S959 Special Seminar: Urban Studies and Planning**

Prereq: Permission of instructor

G (Spring)

Units arranged [P/D/F]

Can be repeated for credit.

For graduate students wishing to pursue further study in advanced areas of urban studies and city and regional planning not covered in regular subjects of instruction.

*Staff***11.S965 Special Subject: Real Estate**

Prereq: Permission of instructor

G (Fall, IAP, Spring, Summer)

Units arranged [P/D/F]

Can be repeated for credit.

Small group study of advanced subjects under staff supervision. For graduate students wishing to pursue further study in advanced areas of real estate not covered in regular subjects of instruction.

*Staff***11.S966 Special Subject: Real Estate**

Prereq: Permission of instructor

G (Fall, IAP, Spring, Summer)

Units arranged

Can be repeated for credit.

Small group study of advanced subjects under staff supervision. For graduate students wishing to pursue further study in advanced areas of real estate not covered in regular subjects of instruction.

*Staff***11.S967 Special Subject: Real Estate**

Prereq: Permission of instructor

G (Fall, IAP, Spring, Summer)

Units arranged

Can be repeated for credit.

Small group study of advanced subjects under staff supervision. For graduate students wishing to pursue further study in advanced areas of real estate not covered in regular subjects of instruction.

*Staff***11.S968 Special Seminar: Real Estate**

Prereq: Permission of instructor

G (Fall, IAP, Spring, Summer)

Units arranged [P/D/F]

Can be repeated for credit.

Small group study of advanced subjects under staff supervision. For graduate students wishing to pursue further study in advanced areas of real estate not covered in regular subjects of instruction.

*Staff***11.S969 Special Seminar: Real Estate**

Prereq: Permission of instructor

G (Fall, Spring; second half of term)

Units arranged [P/D/F]

Can be repeated for credit.

Small group study of advanced subjects under staff supervision. For graduate students wishing to pursue further study in advanced areas of real estate not covered in regular subjects of instruction.

*Staff*

**11.S970 Special Seminar: Real Estate**

Prereq: Permission of instructor

G (Spring)

Units arranged [P/D/F]

Can be repeated for credit.

Small group study of advanced subjects under staff supervision. For graduate students wishing to pursue further study in advanced areas of real estate not covered in regular subjects of instruction.

*Staff*

**11.THG Graduate Thesis**

Prereq: Permission of instructor

G (Fall, IAP, Spring, Summer)

Units arranged

Can be repeated for credit.

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

*Staff*