Urban and environmental issues are interconnected. Urbanization, climate change, habitat loss, pollution, food and energy needs, and issues of social justice and economic stability are among the most pressing issues facing contemporary societies. Environmental and urban processes operate at multiple scales, involving natural and human consequences that cannot be addressed solely from within a single discipline. Students will gain an understanding of the interconnected natural and urban realms, building their understanding of what sustainable development means and how opportunities and challenges can be met. The major motivates a deeper theoretical understanding of urbanism and nature, as well as practical strength in addressing urban and environmental challenges. It brings a spatial and place-based perspective to the study of these challenges, using built form and environmental context as key, conceptual lenses to investigate the social, cultural, economic, and humanistic dimensions of urbanism.

Program of Study

The Environmental and Urban Studies program encourages interdisciplinary approaches to the complex interactions and intersections of urbanism, environment, and society by incorporating frameworks, theories, models, and methods from the humanities, social sciences, natural sciences, urban planning and design, and urban science. Students can choose to focus on either the Environmental Track or the Urban Track. A student interested in urban environmental topics can design a program of study through either track.

• **The Environmental Track** of the major emphasizes critical thinking and rigorous applications to the study of the environment through the social sciences and humanities. Central concepts to this track include human behavior and its relationship to the environment, moral and ethical dimensions of environmental preservation and conservation, the evolution of environmental discourse, communications, and media, and cultural and historical constructions of nature and the human. The track provides emphases in environmental economics and policy, law and politics, sustainable development, human ecology, environmental ethics and justice, and the social and humanistic study of climate change.

• **The Urban Track** of the major emphasizes perspectives on human interaction with the urban, built environment. The track encourages a spatial and place-based urban perspective, meaning that built form and environmental context provide the conceptual core through which the social, economic, and political understanding of urbanism is pursued. The track approaches the nature, dynamics, and human experience of cities by capitalizing on the growth of interest in urban design, urban planning, and emerging urban science.

Students in other fields of study may also complete a minor in Environmental and Urban Studies with an emphasis on one of these tracks. Requirements for the minor follow the description of the major.

Note: Students who matriculated before July 2016 and have questions about Environmental Studies courses that they have already taken should contact the program director of Environmental and Urban Studies, Sabina Shaikh (773.834.4405, sabina@uchicago.edu), to devise their program of study.

Environmental and Urban Studies Major Requirements

Students in the Class of 2021 and beyond will follow the requirements for the Environmental and Urban Studies major, as described below. Students in the Class of 2020 may continue under the previous requirements appropriate to their chosen track, but they may also choose to complete the updated major requirements, provided that they fit within the student’s graduation plan. The previous requirements may be found on the program website.

Students in the major must complete thirteen courses:

**Environmental and Urban Studies Core Sequence**

Students are required to take the two-course core sequence in Environmental and Urban Studies: ENST 21201 Human Impact on the Environment and ENST 20150 Sustainable Urban Development. These courses provide an overview of contemporary environmental issues and the theoretical and empirical approaches used to understand and address them.

**Quantitative Requirements**

Students in both tracks of the major will take ENST 28702 Introduction to GIS and Spatial Analysis (or equivalent), which provides the conceptual and analytics tools for space-based approaches to environmental and urban study. The course is designed to incorporate applications from the social sciences and humanities. Other GIS courses may satisfy this requirement by petition. Students in the major also have a statistics requirement of STAT 22000 Statistical Methods and Applications or an equivalent course, approved by petition to the program director.

**Requirements for All Majors**

(13 total courses: 4 common courses, 8 in the chosen track, and BA Colloquium)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENST 21201</td>
<td>Human Impact on the Environment</td>
<td>100</td>
</tr>
<tr>
<td>ENST 20150</td>
<td>Sustainable Urban Development</td>
<td>100</td>
</tr>
<tr>
<td>ENST 28702</td>
<td>Introduction to GIS and Spatial Analysis</td>
<td>100</td>
</tr>
<tr>
<td>STAT 22000</td>
<td>Statistical Methods and Applications</td>
<td>100</td>
</tr>
<tr>
<td>Chosen Track Courses</td>
<td></td>
<td>800</td>
</tr>
</tbody>
</table>
Internship/field studies experience

**Thematic Tracks in Environmental and Urban Studies**

**Environmental Track**

Students in the Environmental Track will take ENST 21301 Making the Natural World: Foundations of Human Ecology, a course which considers the conceptual underpinnings of contemporary notions of ecology, environment, and balance through the examination of historical trajectories of anthropogenic landscape modification and human society.

The Environmental Track requires completion of three elective courses from an approved list of Environmental Track courses and one elective course from an approved list of Urban Track courses. There is significant overlap in the tracks and many approved courses will be counted towards either track.

Students in the Environmental Track will also complete an experiential learning, practicum, or studio course from an approved list or through petition to the program director. The remaining two courses required for the Environmental Track must come from an approved list of Environmental Science courses, which are focused on physical and natural sciences.

The list of approved courses can be found on the department’s website. Please click here for a full list of approved courses.

**Environmental Track Requirements**

8 additional courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENST 21301</td>
<td>100</td>
</tr>
<tr>
<td>Three Environmental Track elective courses from approved list*</td>
<td>300</td>
</tr>
<tr>
<td>One Urban Track elective course from approved list*</td>
<td>100</td>
</tr>
<tr>
<td>One experiential learning course from approved list*</td>
<td>100</td>
</tr>
<tr>
<td>Two Environmental Science courses from approved list*</td>
<td>200</td>
</tr>
<tr>
<td>Internship/field studies experience</td>
<td></td>
</tr>
</tbody>
</table>

* Must come from approved lists, found on the department's website.

**Urban Track**

Students in the Urban Track are required to take ENST 24600 Introduction to Urban Sciences, a course that provides a grand tour of conceptual frameworks, general phenomena, emerging data and policy applications that define a growing scientific integrated understanding of cities and urbanization.

The Urban Track requires completion of four elective courses from an approved list of Urban Track courses and one elective course from an approved list of Environmental Track courses. There is significant overlap in the tracks and many approved courses will be counted towards either track.

Students in the Urban Track will choose one elective course from an approved list of courses in urban social science. The Urban Track also requires the completion of an experiential learning, practicum, or studio course from an approved list or through petition to the program director.

The list of approved courses can be found on the department’s website. Please click here for a full list of approved courses.

**Urban Track Requirements**

8 additional courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENST 24600</td>
<td>100</td>
</tr>
<tr>
<td>Four Urban Track elective courses from approved list*</td>
<td>400</td>
</tr>
<tr>
<td>One urban social science course from approved list*</td>
<td>100</td>
</tr>
<tr>
<td>One Environmental Track elective course from approved list*</td>
<td>100</td>
</tr>
<tr>
<td>One experiential learning course from approved list*</td>
<td>100</td>
</tr>
<tr>
<td>Internship/field studies experience</td>
<td></td>
</tr>
</tbody>
</table>

*Must come from approved lists, found on the department's website.
BA Thesis

All students in the major are expected to develop significant independent research projects in close consultation with their preceptor and faculty adviser. In their third year, students must meet with an Environmental and Urban Studies preceptor by fourth week of Spring Quarter and submit a detailed topic page by eighth week of Spring Quarter. At this time, students are also required to secure a faculty adviser. The thesis adviser may be chosen from among the faculty teaching in Environmental and Urban Studies (http://environmentalstudies.uchicago.edu/directories/full/faculty-and-staff), members of the Program on Global Environment faculty advisory committee (http://environmentalstudies.uchicago.edu/page/faculty-advisory-committee), or from relevant outside departments. An assigned preceptor will serve as a second reader on all theses. Where appropriate, outside scholars, scientists, or policy experts may be added as additional readers with the approval of the program director.

In their fourth year, students register for ENST 29801 BA Colloquium I (Autumn) or ENST 29802 BA Colloquium II (Winter), which are designed to teach research skills and more generally to aid the research and writing process. Students interested in dedicating more time to the BA process can register for both the Autumn and Winter sections. The final version of the BA thesis is due by the second Friday of the quarter in which the student plans to graduate. Students who have a BA thesis requirement for another major may petition to the program director to count that program’s BA Colloquium towards their Environmental and Urban Studies requirement. Students wishing to build additional time for research or writing into their schedules may speak with their thesis adviser about potentially taking ENST 29900 B. A. Thesis (Reading and Research).

All students graduating in Spring Quarter are required to participate in the BA presentation session during reading period following Spring Quarter of the year they plan to graduate.

This program may accept a BA paper or project used to satisfy the same requirement in another major if certain conditions are met and with the consent of the other program director. Approval from both program directors is required. Students should consult with the directors by the earliest BA proposal deadline (or by the end of their third year, when neither program publishes a deadline). A consent form, to be signed by the directors, is available from the College adviser and on the program website. It must be completed and returned to the College adviser by the end of Autumn Quarter of the student’s year of graduation.

**Required BA Timeline**

**Third years:**
- Attend third year BA meeting at the end of week 7 of Winter Quarter
- Meet with BA preceptor by the end of week 4 of Spring Quarter
- Submit BA Topic Form by the end of week 8 of Spring Quarter

**Fourth years:**
- Register for either ENST 29801 in Autumn Quarter or ENST 29802 in Winter Quarter
- Submit final BA thesis to preceptor and faculty adviser by the end of week 2 of Spring Quarter
- Submit bound copy of final thesis to the department by the end of week 7 of Spring Quarter
- Attend BA Thesis Poster Presentation during reading period of Spring Quarter

Forms can be found here (http://environmentalstudies.uchicago.edu/content/program-forms).

**Internship or Field Studies Program**

In addition to course work, students will be required to participate in an approved internship or field studies program with significant links to their program of study. Activities that fulfill the internship requirement include summer or academic year internships of varying lengths, research assistantships, fellowships or field studies with faculty or other academic staff, participation in working groups or the program Student Advisory and Research Council, completion of the Chicago Studies Certificate Program, or other sustained engagements relating to environmental and urban studies. Participation in recognized student organizations, while encouraged, does not count towards the internship requirement. Students must complete the internship evaluation form available on the program website before week 2 of Spring Quarter in the year they plan to graduate. See below for more on the Chicago Studies Certificate Program.

**Advising**

Application for admission to the Environmental and Urban Studies program should be made to the program preceptor, who explains requirements and arranges a preliminary program of study. Admission to the major or minor is complete when a program of study has been approved by the program director. This program of study, which the student formulates in consultation with both the program preceptor and the program director, should be in place by a student's third year. The contact information for the current program preceptors is available on the program website at environmentalstudies-sites.uchicago.edu.

Environmental and Urban Studies majors and minors must submit the Intent to Graduate form no later than the first week of the quarter in which they intend to graduate. The form is available online (https://registrar.uchicago.edu/graduation/application-to-graduate) and must be submitted electronically.
Students will need to formalize their declaration of the major on my.uchicago.edu and provide regular documentation of any program approvals from the department to their College adviser for the requisite processing.

Grading
Students who are majoring or minoring in Environmental and Urban Studies must receive quality grades in courses taken to meet the requirements of the program.

Honors
Eligibility for honors requires an overall GPA of 3.0 or higher, a GPA of 3.5 or higher in the courses taken to meet the requirements of the program, and a BA thesis that is judged to be a high pass by the faculty and preceptor readers.

Minor Program in Environmental and Urban Studies
Students who are not Environmental and Urban Studies majors may complete a minor in Environmental and Urban Studies. Such a minor requires six courses be taken according to the following guidelines:

**Tracks**
- Environmental
- Urban

**Requirements for Both Minor Tracks (2 courses)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENST 21201</td>
<td>Human Impact on the Environment</td>
<td>100</td>
</tr>
<tr>
<td>ENST 20150</td>
<td>Sustainable Urban Development</td>
<td>100</td>
</tr>
</tbody>
</table>

Total Units: 200

**Additional Requirements for Minor Environmental Track (4 additional courses)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENST 21301</td>
<td>Making the Natural World: Foundations of Human Ecology</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>Three courses in the Environmental Track*</td>
<td>300</td>
</tr>
</tbody>
</table>

Total Units: 400

**Additional Requirements for Minor Urban Track (4 additional courses)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENST 24600</td>
<td>Introduction to Urban Sciences</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>One course in urban social sciences*</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>Two Urban Track elective courses*</td>
<td>200</td>
</tr>
</tbody>
</table>

Total Units: 400

Students who elect the minor program in Environmental and Urban Studies should meet with the program director before the end of Spring Quarter of their third year to declare their intention to complete the minor and select appropriate courses. The approval of the program director for the minor program should be submitted to a student's College adviser by the deadline above on a form obtained from the adviser.

Courses in the minor (1) may not be double counted with the student's major(s) or with other minors and (2) may not be counted toward general education requirements. Courses in the minor must be taken for quality grades, and at least half of the requirements for the minor must be met by registering for courses bearing University of Chicago course numbers.

Experiential Learning Opportunities
The Environmental and Urban Studies major offers experiential learning opportunities through practicum courses, the Chicago Studies Quarter, and the Chicago Studies Certificate Program. Students are encouraged to enroll in these programs, which offer immersion in the academic, experiential, interdisciplinary study of Chicago and its region. For more information about these programs, please see the listing in this catalog or visit chicagostudies.uchicago.edu.

Chicago Studies Quarter
Each spring, a small cohort of students studies the culture, politics, and history of the city through a curriculum of three interrelated courses with a common theme through the Chicago Studies Quarter. Admission to the program is competitive. Courses are taught by Chicago specialists from a variety of disciplines and join classroom instruction with weekly excursions and co-curricular activities.

All courses in the Chicago Studies Quarter will have an Environmental and Urban Studies course number. They are also listed in all three tracks of the major and can therefore be taken to satisfy requirements either within or outside the student’s primary track.

Chicago Studies Quarter: Calumet
Since 2012, the Calumet Quarter has offered a one-quarter, intensive, experience-based program focused on human land use in the Calumet Region just south and east of the city. As of 2017–18, it has merged with the Chicago Studies Quarter and is officially known as the Chicago Studies Quarter: Calumet. It features integrated courses, projects, field trips,
guest lectures, and presentations, and integrates perspectives from the sciences, humanities, and social sciences in the study of local environments and communities.

Chicago Studies Quarter: Calumet is offered every other year. The next offering will be in Spring Quarter 2020. Courses taken as part of this program can be used to satisfy requirements in all three tracks of the major.

Chicago Studies Certificate
The Chicago Studies Certificate, launched in 2017–18, is designed for students who wish to integrate their academic inquiry with positive impact in Chicago through sustained community engagement, urban scholarship, and creative expression. The certificate is overseen by the University Community Service Center in collaboration with the Environmental and Urban Studies program, which supervises the program’s academic requirements.

Completion of the Chicago Studies Certificate will satisfy the internship/field study requirement for the Environmental and Urban Studies major.

Environmental Studies Courses

**ENST 10050. Pathways in Urban Studies. 100 Units.**
The world is urbanizing at an increasing rate, and the idea of the city remains a potent one for community builders, policy makers, and researchers of all kinds. This course explores the work of city-building through public policy, placemaking, and urban planning and design. Students will read from fundamental writings in urbanism and policy, and then hear directly from practitioners in the field - community organizers, social entrepreneurs, and other urban actors - to understand how theory meets practice in the form and function of the city, as well as visit local organizations and sites of urban intervention. While the course will focus on American cities, students will also have an opportunity to read and think globally about urbanism, and to learn from guest speakers who work in the field of international urban development. Many consider Chicago a paradigmatic American city, and there is much to learn simply from experiencing the boundaries of our campus and the ways in which our campus touches and changes the city. Students in this course will join the university’s long history of urban research that continues to this day, across disciplines.

Terms Offered: Summer

**ENST 12002. Jewish Civilization III - Jews and the City: Migration and Urbanization in the Modern Jewish Diaspora. 100 Units.**
Why are Jews often referred to as "the people of the city," and how did this ethnic group become one of the most urbanized in the world? This course explores the multifaceted relationship between Jews and cities over the course of the long 19thcentury. Through critical reading of primary sources (in translation) and discussion of modern research, we will investigate the experiences of and connections between two formative processes-migration and urbanization-in the modern Jewish world. The course is transnational in focus, structured thematically around major global urban centers which absorbed Jewish migrants in the late 19hand early 20th centuries. Particular focus will be paid to Jewish encounters with experience in Berlin, Vienna, Paris, Warsaw, Odessa, Kiev, London, New York, and Chicago. We will investigate how modern Jewish identities are produced both in and through urban space, and we will analyze how Jewish migration has in turn shaped urban and city life.

Instructor(s): Anna Band Terms Offered: Spring

Note(s): In order for the Spring course to qualify as a civilization course for the general education requirement, the student must have completed Jewish Civilization I and II. The Spring course, however, may also be taken as an independent elective. Equivalent Course(s): JWSC 12002, HIST 17205

**ENST 12105. Sex and Gender in The City. 100 Units.**
This course is designed to introduce students to some of the key concerns at the intersection of gender studies and urban studies. In this course, we will take gender relations and sexuality as our primary concern and as a constitutive aspect of social relations that vitally shape cities and urban life. We will examine how gender is inscribed in city landscapes, how it is lived and embodied in relation to race, class, and sexuality, and how it is (re)produced through violence, inequality, and resistance. Over the course of the quarter, we will draw on an interdisciplinary scholarship that approaches the central question of how and why thinking about urban life in relation to gender and sex matters.

Instructor(s): Sneha Annavarapu Terms Offered: Spring

Note(s): This course counts as a Foundations course for GNSE majors Equivalent Course(s): GNSE 12105, SOCI 28088

**ENST 12300. Global Warming: Understanding the Forecast. 100 Units.**
This course presents the science behind the forecast of global warming to enable the student to evaluate the likelihood and potential severity of anthropogenic climate change in the coming centuries. It includes an overview of the physics of the greenhouse effect, including comparisons with Venus and Mars; an overview of the carbon cycle in its role as a global thermostat; predictions and reliability of climate model forecasts of the greenhouse world. This course is part of the College Course Cluster program, Climate Change, Culture, and Society. (L)

Instructor(s): D. MacAyeal Terms Offered: Autumn

Prerequisite(s): Some knowledge of chemistry or physics helpful.

Equivalent Course(s): PHSC 13400, GEOS 13400, ENSC 13400
ENST 12402. Life Through a Genomic Lens. 100 Units.
The implications of the double helical structure of DNA triggered a revolution in cell biology. More recently, the technology to sequence vast stretches of DNA has offered new vistas in fields ranging from human origins to the study of biodiversity. This course considers a set of these issues, including the impact of a DNA perspective on the legal system, on medicine, and on conservation biology.
Instructor(s): A. Turkewitz, M. Nobrega Terms Offered: Winter
Prerequisite(s): BIOS 10130. NO BIOLOGICAL SCIENCES MAJORS OR NON-BIOLOGY PRE-MED STUDENTS, except by petition.
Equivalent Course(s): BIOS 11125

ENST 13300. The Atmosphere. 100 Units.
This course introduces the physics, chemistry, and phenomenology of the Earth's atmosphere, with an emphasis on the fundamental science that underlies atmospheric behavior and climate. Topics include (1) atmospheric composition, evolution, and structure; (2) solar and terrestrial radiation in the atmospheric energy balance; (3) the role of water in determining atmospheric structure; and (4) wind systems, including the global circulation, and weather systems.
Instructor(s): D. Abbot Terms Offered: Spring
Prerequisite(s): MATH 13100-MATH 13200
Equivalent Course(s): ENSC 13300, GEOS 13300

ENST 13410. Global Warming: Understanding the Forecast (Flipped Class) 100 Units.
This course presents the science behind the forecast of global warming to enable the student to evaluate the likelihood and potential severity of anthropogenic climate change in the coming centuries. It includes an overview of the physics of the greenhouse effect, including comparisons with Venus and Mars; an overview of the carbon cycle in its role as a global thermostat; predictions and reliability of climate model forecasts of the greenhouse world. This course is part of the College Course Cluster program, Climate Change, Culture, and Society. This course covers the same material as PHSC 13400, but is organized using a flipped classroom approach in order to increase student engagement and learning.
Instructor(s): D. Abbot Terms Offered: Spring
Prerequisite(s): Some knowledge of chemistry or physics helpful.
Equivalent Course(s): ENSC 13410, GEOS 13410, PHSC 13410

ENST 16603. Rome: The Eternal City. 100 Units.
The city of Rome was central to European culture in terms both of its material reality and the models of political and sacred authority that it provided. Students in this course will receive an introduction to the archaeology and history of the city from the Iron Age to the early medieval period (ca. 850 BCE-850 CE) and an overview of the range of different intellectual and scientific approaches by which scholars have engaged with the city and its legacy. Students will encounter a broad range of sources, both textual and material, from each period that show how the city physically developed and transformed within shifting historical and cultural contexts. We will consider how various social and power dynamics contributed to the formation and use of Rome's urban space, including how neighborhoods and residential space developed beyond the city's more famous monumental areas. Our main theme will be how Rome in any period was, and still is, a product of both its present and past and how its human and material legacies were constantly shaping and reshaping the city's use and space in later periods.
Instructor(s): Margaret Andrews Terms Offered: Spring
Note(s): History Gateways are introductory courses meant to appeal to 1st- through 3rd-yr students who may not have done previous course work on the topic of the course; topics cover the globe and span the ages.
Equivalent Course(s): ANTH 26115, HIST 16603, CLCV 24119

ENST 20150. Sustainable Urban Development. 100 Units.
The course covers concepts and methods of sustainable urbanism, livable cities, resiliency, and smart growth principles from a social, environmental and economic perspective.
Terms Offered: Winter

ENST 20250. Introduction to Statistical Concepts and Methods. 100 Units.
Psychological research is a project of understanding the ways in which people are similar while grappling with the ways in which they are different. Statistical methods are a powerful tool for managing the tension between the two. This course introduces the statistical methods most commonly used in psychology, as well as their use in the R programming language. Topics involve exploratory data analysis, sampling and randomization, and hypothesis testing.
Instructor(s): TBD Terms Offered: Winter
Prerequisite(s): It is recommended that students complete MATH 13100 and MATH 13200 (or higher) before taking this course.
Equivalent Course(s): PSYC 20250, EDSO 20250
ENST 20300. The Science, History, Policy, and Future of Water. 100 Units.
Water is shockingly bizarre in its properties and of unsurpassed importance throughout human history, yet so mundane as to often be invisible in our daily lives. In this course, we will traverse diverse perspectives on water. The journey begins with an exploration of the mysteries of water's properties on the molecular level, zooming out through its central role at biological and geological scales. Next, we travel through the history of human civilization, highlighting the fundamental part water has played throughout, including the complexities of water policy, privatization, and pricing in today's world. Attention then turns to technology and innovation, emphasizing the daunting challenges dictated by increasing water stress and a changing climate as well as the enticing opportunities to achieve a secure global water future.
Instructor(s): Seth Darling Terms Offered: Winter
Equivalent Course(s): None

ENST 20500. Introduction to Population. 100 Units.
This course provides an introduction to the field of demography, which examines the growth and characteristics of human populations. It also provides an overview of our knowledge of three fundamental population processes: fertility, mortality, and migration. We cover marriage, cohabitation, marital disruption, aging, and population and environment. In each case we examine historical trends. We also discuss causes and consequences of recent trends in population growth, and the current demographic situation in developing and developed countries.
Instructor(s): L. Waite Terms Offered: Winter
Equivalent Course(s): SOCI 20122, CHDV 20122, GNSE 20120

ENST 20510. Introduction to Spatial Data Science. 100 Units.
Spatial data science consists of a collection of concepts and methods drawn from both statistics and computer science that deal with accessing, manipulating, visualizing, exploring and reasoning about geographical data. The course introduces the types of spatial data relevant in social science inquiry and reviews a range of methods to explore these data. Topics covered include formal spatial data structures, geovisualization and visual analytics, rate smoothing, spatial autocorrelation, cluster detection and spatial data mining. An important aspect of the course is to learn and apply open source software tools, including R and GeoDa.
Instructor(s): L. Anselin and M. Kolak Terms Offered: Autumn
Prerequisite(s): STAT 22000 (or equivalent), familiarity with GIS is helpful, but not necessary
Equivalent Course(s): GEOG 20500, SOCI 30253, GEOG 30500, SOCI 20253, MACS 54000

ENST 20540. The Chicago Climate Change & Culture Institute-I. 100 Units.
Climate change is arguably the greatest environmental, political and cultural challenge of our times. We are already beginning to feel its impacts in changing weather patterns and rising temperatures. In the years to come, Earth scientists tell us that climate change will impact every human being on the planet. We need to become informed and engaged about what awaits us and what we can do to avoid worst-case scenarios. This 3-week intensive course of study focuses on three key questions: Why did climate change happen? How is it impacting different communities across the world? What can be done to prepare the world for a more environmentally secure future? The 4CI program features lectures by leading experts on climate change from the Social Sciences, Earth Sciences, Humanities, Art and Architecture. Seminar discussions and site visits to a variety of local initiatives working toward clean energy and sustainability goals round out the program. 4CI will give you the answers you want about climate change and the tools you need to start making a positive difference, whether that is on your campus, in your community or at your workplace. The program leverages the intellectual resources of one of the world's most prestigious research universities and will acquaint you with a city that proudly stands on the cutting edge of sustainable urbanism.
Terms Offered: Summer
Equivalent Course(s): ANTH 20540, ANTH 30540

ENST 20805. Cities and Urban Space in the Ancient World. 100 Units.
Cities have been features in human landscapes for nearly six thousand years. This course will explore how cities became such a dominant feature of settlement patterns in the ancient Mediterranean and Near East, ca. 4,000 BCE-350 CE. Was there an "Urban Revolution," and how did it start? What various physical forms did cities assume, and why did cities physically differ (or not) from each other? What functions did cities have in different cultures of the past, and what cultural value did "urban" life have? How do past perspectives on cities compare with contemporary ones? Working thematically and using theoretical and comparative approaches, this course will address various aspects of ancient urban space and its occupation, with each topic backed up by in-depth analysis of concrete case studies.
Instructor(s): M. Andrews Terms Offered: Spring
Equivalent Course(s): HIST 30805, ANCM 36618, HIST 20805, CLAS 36618, CLCV 26618

ENST 21201. Human Impact on the Environment. 100 Units.
Students will analyze the impact of the human enterprise on the world that sustains it. Topics include human population dynamics, historical trends in human well-being, our use of natural resources-especially in relation to the provision of energy, water, and food-and the impacts these activities have on the range of goods and services provided by geological/ecological systems. Students will read and discuss diverse sources and write short weekly papers.
Instructor(s): Alison Anastasio Terms Offered: Autumn
Note(s): ENST 21201 and 21301 are required of students who are majoring in Environmental Studies and may be taken in any order.
Equivalent Course(s): NCDV 21201
ENST 21220. Cities Through Space and Time. 100 Units.
This course introduces you to cities. What are cities? Where do they come from? How do they work? In Calvino's words, what are the “invisible reasons that make cities live”? And, crucially, how can cities be better than they are today? In investigating these questions, we will explore the spatial, economic, cultural, political, and social aspects of cities, including topics like industrialization, transportation technologies, social movements, gentrification, and environmental design. We will examine case studies drawn from both the Global North and South that will help us see how the ideas we explore are being worked out in actual practice in cities, and we will also explore the qualitative, quantitative, and spatial tools used for studying cities. Class sessions will involve a mix of (interactive) lectures, discussion, and exercises. Outside class, the primary work will be reading selected texts and writing responses. There will also be a midterm and a final exam.
Instructor(s): Evan Carver Terms Offered: Autumn
Equivalent Course(s): GEOG 21221, PBPL 21220

ENST 21301. Making the Natural World: Foundations of Human Ecology. 100 Units.
Humans have “made” the natural world both conceptually, through the creation of various ideas about nature, ecosystem, organism, and ecology, and materially, through millennia of direct action in and on the landscape. In this course we will consider the conceptual underpinnings of contemporary Western notions of nature, environment, and balance, through the examination of specific historical trajectories of anthropogenic landscape modification and human society. Taking examples from current events we will evaluate the extent and character of human entanglement with the environment. ENST 21201 and 21301 are required of students who are majoring in Environmental and Urban Studies and may be taken in any order.
Instructor(s): Alison Anastasio Terms Offered: Winter
Note(s): ENST 21201 and 21301 are required of students who are majoring in Environmental Studies and may be taken in any order.
Equivalent Course(s): ANTH 21303

ENST 21310. Water: Economics, Policy and Society. 100 Units.
Concerns about water have a long history in human societies. While modern advances in water technology and new ways of considering water economics and policy have emerged to address stressors from development pressures, land use changes and urbanization, water problems continue to evolve across the globe. These problems, while rooted in scarcity, continue to become more complex due to myriad human and natural forces. Droughts and water shortages persist, putting pressure on agricultural production and urban water use, while the increased frequency and severity of rainfall and tropical storms, already being experienced globally, are only projected to grow in intensity and duration under climate change. This course examines how to design, implement and evaluate water-based policies at multiple scales under pressures from climate change, development, globalization and population growth. Students will explore water from the perspective of the social sciences and public policy, with attention on behavioral dimensions of water use and water conservation. Students in the course will consider and evaluate policy interventions to manage water and governance of public goods including property rights, water trading and water pricing.
Instructor(s): Sabina Shaikh Terms Offered: Spring
Note(s): No prerequisites but the following courses are strongly recommended prior to enrollment in ENST 21310: PBPL 20000: Economics for Public Policy and PBPL 22200: Public Policy Analysis OR ECON 2000: The Elements of Economics Analysis I and ECON 20100: The Elements of Economics Analysis II ENST/MENG 20300: The Science, History, Policy, and Future of Water (Winter 2020) ENST 21800: Economics and Environmental Policy
equivalent Course(s): GLST 21310, LLSO 21310, ECON 16510, PBPL 21310

ENST 21440. (Re)constructing Nature: Restoration Ecology in a Time of Climate Change. 100 Units.
Restoration ecologists, environmental professionals, and average citizens all participate in the process of habitat restoration. How does this interdisciplinary practice balance the priorities of ecosystem function and services, conservation of imperiled species and habitats, aesthetic appeal, and human use in a dynamic climate? In this course students will gain a broad overview of the field of restoration ecology and approach it from scientific, practical, and humanistic perspectives using scientific literature, case studies, and planning documents.

ENST 21500. Environmental Justice. 100 Units.
The effects of environmental pollution are not evenly distributed and are more likely to be experienced by low-income and minority communities. The location of toxic waste sites (both manufacturing plants and dump sites), the persistence of brownfields locations, and a lack of parks and open space are some of the conditions that have led to an ongoing effort to expand the focus of environmental advocacy to the pursuit of equitable and just outcomes in disadvantaged neighborhoods. This course will examine the history of the environmental justice, the efforts to pursue more equitable outcomes, and the prospect for such efforts in the face of global challenges such as climate change. The course will include class visits to sites in Chicago where environmental justice efforts are being undertaken as well as speakers from environmental justice organizations.
Instructor(s): Raymond Lodato Terms Offered: Autumn
Equivalent Course(s): PBPL 21501
ENST 21730. Science, Technology and Media via Japan. 100 Units.
This course will explore issues of culture, technology, and environment in Japan through the lens of Science and Technology Studies (STS) and Media Studies. The course is designed for undergraduate students. Its overall aim is to introduce students to some of the fundamental concepts, themes, and problematics in these fields via the particular social and historical circumstances in Japan. Some of the central concerns will be around issues of environment, disaster, gender, labor, media theory, gaming, and animation. In addition, we will devote attention to the recent emergence of the term media ecology as a framework problematizing technologically engineered environments.
Instructor(s): M. Fisch Terms Offered: Winter
Equivalent Course(s): MAAD 11730, EALC 21730, ANTH 21730

ENST 21800. Economics and Environmental Policy. 100 Units.
This course combines basic microeconomic theory and tools with contemporary environmental and resources issues and controversies to examine and analyze public policy decisions. Theoretical points include externalities, public goods, common-property resources, valuing resources, benefit/cost analysis, and risk assessment. Topics include pollution, global climate change, energy use and conservation, recycling and waste management, endangered species and biodiversity, nonrenewable resources, congestion, economic growth and the environment, and equity impacts of public policies.
Instructor(s): S. Shaikh Terms Offered: Autumn
Prerequisite(s): ECON 19800 or higher, or PBPL 20000
Equivalent Course(s): PBPL 21800, LLSO 26201, ECON 16520

ENST 22209. Philosophies of Environmentalism and Sustainability. 100 Units.
Many of the toughest ethical and political challenges confronting the world today are related to environmental issues: for example, climate change, loss of biodiversity, the unsustainable use of natural resources, pollution, and other threats to the well-being of both present and future generations. Using both classic and contemporary works, this course will highlight some of the fundamental and unavoidable philosophical questions presented by such environmental issues. What do the terms "nature" and "wilderness" even mean, and can "natural" environments as such have ethical and/or legal standing? Does the environmental crisis demand radically new forms of ethical and political philosophizing and practice? Must an environmental ethic reject anthropocentrism? If so, what are the most plausible non-anthropocentric alternatives? What counts as the proper ethical treatment of non-human animals, living organisms, or ecosystems? What fundamental ethical and political perspectives inform such approaches as the "Land Ethic," ecofeminism, and deep ecology? Is there a plausible account of justice for future generations? Are we now in the Anthropocene? Is "adaptation" the best strategy at this historical juncture? How can the wild, the rural, and the urban all contribute to a better future for Planet Earth? (A)
Instructor(s): B. Schultz Terms Offered: Autumn
Note(s): Field trips, guest speakers, and special projects will help us philosophize about the fate of the earth by connecting the local and the global. Please be patient with the flexible course organization! Some rescheduling may be necessary in order to accommodate guest speakers and the weather!
Equivalent Course(s): PLSC 22202, HMRT 22201, PHIL 22209, GNSE 22204

ENST 22300. South Side Ecologies. 100 Units.
South Side Ecologies is a project based course offered every other spring on an environmental topic of concern to communities on the South Side of Chicago. During the first half of the class we will use scholarly and popular sources to understand the background and extent of the issue, while the second half will engage with expert partners to execute a project in their area of need. Due to the experiential nature of this course, while we will strive to have class meetings in the official time and place, students should expect they may need to attend meetings, interviews, guest lectures, or other activities at other times and locations during the week. Every effort will be made to accommodate the needs and schedules of students in the course. In 2019, we will focus on the confluence of history, culture, industry, nature, recreation, and the narratives that weave them together, on the South East Side of Chicago. In particular, we will be collaborating with the Chicago Park District and community stakeholders to research and develop interpretive materials for parks in the Calumet region, including Steelworkers Park and Big Marsh.
Instructor(s): Alison Anastasio Terms Offered: Spring. Every other spring

ENST 2261. Paris from "Les Misérables" to the Liberation, c. 1830-1950. 100 Units.
Starting with the grim and dysfunctional city described in Victor Hugo’s "Les Misérables," the course will examine the history of Paris over the period in which it became viewed as the city par excellence of urban modernity through to the testing times of Nazi occupation and then liberation (c. 1830-1950). As well as focussing on architecture and the built environment, we will examine the political, social, and especially cultural history of the city. A particular feature of the course will be representations of the city-literary (Victor Hugo, Baudelaire, Zola, etc.) and artistic (impressionism and postimpressionism, cubism, surrealism). We will also examine the city’s own view of itself through the prism of successive world fairs (expositions universelles).
Instructor(s): C. Jones Terms Offered: Spring
Prerequisite(s): Students taking FREN 22620/32620 must read texts in French.
Equivalent Course(s): FREN 32620, HIST 22611, HIST 32611, FREN 22620

ENST 22611. Paris from "Les Misérables" to the Liberation, c. 1830-1950. 100 Units.
Starting with the grim and dysfunctional city described in Victor Hugo’s "Les Misérables," the course will examine the history of Paris over the period in which it became viewed as the city par excellence of urban modernity through to the testing times of Nazi occupation and then liberation (c. 1830-1950). As well as focussing on architecture and the built environment, we will examine the political, social, and especially cultural history of the city. A particular feature of the course will be representations of the city-literary (Victor Hugo, Baudelaire, Zola, etc.) and artistic (impressionism and postimpressionism, cubism, surrealism). We will also examine the city’s own view of itself through the prism of successive world fairs (expositions universelles).
Instructor(s): C. Jones Terms Offered: Spring
Prerequisite(s): Students taking FREN 22620/32620 must read texts in French.
Equivalent Course(s): FREN 32620, HIST 22611, HIST 32611, FREN 22620
ENST 22708. Planetary Britain, 1600-1900, 100 Units.
What were the causes behind Britain’s Industrial Revolution? In the vast scholarship on this problem, one particularly heated
debate has focused on the imperial origins of industrialization. How much did colonial resources and markets contribute
to economic growth and technological innovation in the metropole? The second part of the course will consider the global
effects of British industrialization. To what extent can we trace anthropogenic climate change and other planetary crises back
to the environmental transformation wrought by the British Empire? Topics include ecological imperialism, metabolic rift,
the sugar revolution, the slave trade, naval construction and forestry, the East India Company, free trade and agriculture,
energy use and climate change.
Equivalent Course(s): HIST 32708, HIST 22708, KNOW 32808, CHSS 32708, KNOW 22708, HIPS 22708

ENST 23100. Environmental Law, 100 Units.
This course will examine the bases and assumptions that have driven the development of environmental law, as well as
the intersection of this body of law and foundational legal principles (including standing, liability, and the Commerce
Clause). Each form of lawmaking (statutes, regulations, and court decisions) will be examined, with emphasis on reading
and understanding primary sources such as court cases and the laws themselves. The course also analyzes the judicial
selection process in order to understand the importance of how the individuals who decide cases that determine the shape of
environmental law and regulations are chosen.
Instructor(s): R. Lodato Terms Offered: Winter
Prerequisite(s): Third- or fourth-year standing, or consent of instructor
Equivalent Course(s): LLSO 23100, PBPL 23100

ENST 23289. Marine Ecology. 100 Units.
This course provides an introduction into the physical, chemical, and biological forces controlling the function of marine
ecosystems and how marine communities are organized. The structures of various types of marine ecosystems are described
and contrasted, and the lectures highlight aspects of marine ecology relevant to applied issues such as conservation and
harvesting.
Instructor(s): T. Wootton Terms Offered: Winter
Prerequisite(s): Three quarters of a Biological Sciences Fundamentals sequence and prior introductory course in ecology or
consent of instructor.
Equivalent Course(s): BIOS 23289

ENST 23500. Political Sociology, 100 Units.
This course provides analytical perspectives on citizen preference theory, public choice, group theory, bureaucrats and state-
centered theory, coalition theory, elite theories, and political culture. These competing analytical perspectives are assessed in
considering middle-range theories and empirical studies on central themes of political sociology. Local, national, and cross-
national analyses are explored. The course covers readings for the Sociology Ph.D Prelim exam in political sociology.
Instructor(s): E. Clemens Terms Offered: Autumn
Prerequisite(s): Completion of the general education requirement in the social sciences
Equivalent Course(s): PBPL 23600, SOCI 20106, SOCI 30106

ENST 23505. Environmental Ethics, 100 Units.
This course examines foundational issues of environmental ethics. What kind of values (economic, aesthetic, existence) are
important? What kind of value do individual biota, humans, other species, ecosystems, humans, or inorganic entities have? What
is the relationship of humans to the rest of the world? What should it be? Do religious and philosophical traditions contribute to or help address environmental degradation?
Instructor(s): S. Fredericks Terms Offered: Winter
Equivalent Course(s): RLST 23505

ENST 23550. Urban Ecology and the Nature of Cities. 100 Units.
Urban ecology is an interdisciplinary field derived from the academic discipline of ecology. How well does classical
ecological theory, typically formed from reductionist views of nature without humans, describe and predict patterns in
human-dominated landscapes? Students will learn fundamental concepts in ecological theory, examine how these concepts
apply to urban systems, and explore the paradigms of ecology in, of, and for cities. Readings and discussions will focus on
classical research papers from the ecological literature, history of modern ecology, and contemporary approaches to studying
biotic systems in cities.
Instructor(s): Alison Anastasio Terms Offered: Winter
Equivalent Course(s): PBPL 23550
ENST 23640. Fruitied Plains and Scarred Mountains: The Environmental History of Work in the United States. 100 Units.

Ask most people to name an ecosystem, and they'll probably talk about mountains, beaches, plains, or forests. But most of us spend nearly a third of our adult lives in another ecosystem we often don't think about: our workplace. In fact, one of the most common ways humans interact with the environment in our modern world is by working-from farming and mining to housekeeping and coding. This course will examine the environmental history of work in the United States from the colonial era to the present through lectures, discussion, and other forms of active learning. We will cover a range of topics including racialized and gendered labors, the work of empire, energy workplaces, industrialization, agriculture, the information revolution, and climate adaptation. By engaging this history, we will also consider broader interdisciplinary questions: how should environmental concerns shape labor policy and organizing? What workplace considerations must be incorporated into the development of climate adaptation strategies and just transition programs? Why do the stories that we tell ourselves about the meaning of work matter for climate justice? What is the future of work in a climate-changed world?

Instructor(s): Trish Kahle
Terms Offered: Winter
Note(s): Prize lecture for 18-19 AY. Not offered 19-20.
Equivalent Course(s): HIST 27208

ENST 23645. Farms as Factories: Industrial Ideals in 'Modern' Agriculture. 100 Units.

Plants and animals are now produced in capital-intensive, factory-like settings. The industrialization of agriculture has not only transformed what we eat, but also the ecology of the globe and biology of its inhabitants. This course explores the logics, history, and consequences of an agricultural sector that simultaneously generates lagoons of pig manure, proprietary DNA, and monocropped landscapes. How does commoditizing wheat alter its value? How do pigs change when they live their lives on concrete? What forms of care are needed to keep antibiotic-laden chickens alive? How does the industrial production of life rearrange 'modern' concepts of nature? The course situates these questions within a broader framework of capitalism and commoditization; we begin by studying the rationale of proto-industrial production on slave plantations, consider the results of agricultural 'modernization' in the 19th and 20th centuries, and analyze how social scientists have studied these processes. Then, we examine how agricultural products - plants and animals - have been physically altered to facilitate standardized production, and study how these shifts have changed the role of workers and social milieu of agrarian labor. In addition to contextualizing modern agricultural production, this class is an introduction to animal and plant studies, theories of capitalism and commodification, and environmental studies.

Instructor(s): Graduate lecturer
Terms Offered: Winter
Equivalent Course(s): ANTH 23816

ENST 23650. Revolutionizing Agriculture: Early Modern Technologies for the New Millennium. 100 Units.

Based on a wave of sustainable and organic farming technologies that have reinvented early modern growing practices, this course integrates USDA reports and modern field and lab studies into the historiography of The British Agricultural Revolution. We explore primary historical sources and historiography to better understand the environmental limits of the technologies used by organic and sustainable farmers today. By bringing the science and history into discourse, we will take a critical look at the British Agricultural Revolution, which is thought to have facilitated the Industrial Revolution by accumulating capital for investment and by allowing England to feed a growing urban population and manufacturing sector without a significant increase in arable acres.

Note(s): Prize lecture for 17-18 AY.
Equivalent Course(s): HIST 25015, PBPL 23650

ENST 23900. Environmental Chemistry. 100 Units.

The focus of this course is the fundamental science underlying issues of local and regional scale pollution. In particular, the lifetimes of important pollutants in the air, water, and soils are examined by considering the roles played by photochemistry, surface chemistry, biological processes, and dispersal into the surrounding environment. Specific topics include urban air quality, water quality, long-lived organic toxins, heavy metals, and indoor air pollution. Control measures are also considered. This course is part of the College Course Cluster program: Climate Change, Culture, and Society.

Instructor(s): A. Colman, D. Archer
Terms Offered: Autumn
Prerequisite(s): CHEM 11101-11201 or equivalent, and prior calculus course
Equivalent Course(s): ENSC 23900, GEOS 33900, GEOS 23900

ENST 24007. Chernobyl: Bodies and Nature After Disaster. 100 Units.

When reactor number 4 at the Chernobyl Nuclear Power Station exploded, it quickly made headlines around the world. Swedes found radiation in their air, Germans in their milk, Greeks in their grain, and Britons in their sheep. Ukrainians and Belarusians found it in their rain, wind, water sources, homes, and in their children's thyroids. Germans and Ukrainians worried about finding it in their bodies, especially in pregnant or fetal bodies. A lot of roads led to the Chernobyl disaster: the Soviet state system, to be sure, but also the Cold War arms race, a faith in scientific progress shared in East and West, and a global disregard for the natural world and the human body. This course will follow those roads to the climax of the explosion and then examine the many paths out of Chernobyl: the disaster's aftereffects on geopolitics, environmentalism, feminism, and body politics. We will draw on a recent outpouring of scholarly and popular works on Chernobyl, including books, podcasts, and television series. We will also read texts on feminism, environmentalism, and other nuclear disasters, Cold War histories, and fiction to provide context and sites for further inquiry.

Instructor(s): P. O'Donnell
Terms Offered: Winter
Equivalent Course(s): REES 24007, HIST 24007, GNSE 24007
ENST 24020. The Place of the Intellectual: Civic Life in Italian Literature and Theory. 100 Units.
This course offers a survey of the notion of civic life in Italian literature and theory, from its beginning(s) to contemporary authors. The topic will be explored through some of the major representatives in Italian intellectual history, actively concerned with the life of the community at the urban, national and transnational level. From Dante to Petrarch, from Renaissance Civic Humanism to Machiavelli, from Vico to Gramsci, from Esposito to Agamben, the focus of the class will be on human sociability and on the forces that enhance or hinder the constitution of communities and collective life. Italy offers a privileged entry point into the issue of civic life due to its belated national unification and richness in local cultural varieties, traits that makes Italy unique in the European cultural and political landscape. Thematically, the class will look at the relationship between Church and Empire; at forms of communality beyond political institutions, such as friendship and family; at the imagination of ideal cities and utopias; at the effects of disruptive natural and human events on the making/unmaking of human sociability; at literature and popular culture in the constitution of regional and national identities.
Instructor(s): M. Muccione Terms Offered: Spring
Note(s): Taught in English.
Equivalent Course(s): ITAL 24020

ENST 24102. Environmental Politics. 100 Units.
This course examines the different theoretical underpinnings of environmental activism and elucidates the manner in which they lead to different ends. We explore several contrasting views of environmentalism, including the land ethic, social ecology, and deep ecology. Discussions are based on questions posed about the readings and the implications they suggest. Class participation is required.
Instructor(s): R. Lodato Terms Offered: Spring
Equivalent Course(s): PBPL 24102, LLSO 24102

ENST 24190. Imagining Chicago’s Common Buildings. 100 Units.
This course is an architectural studio based in the common residential buildings of Chicago and the city’s built environment. While design projects and architectural skills will be the focus of the class, it will also incorporate readings, a small amount of writing, some social and geographical history, and several explorations around Chicago. The studio will: (1) give students interested in pursuing architecture or the study of cities experience with a studio class and some skills related to architectural thinking, (2) acquaint students intimately with Chicago’s common residential buildings and built fabric, and (3) situate all this within a context of social thought about residential architecture, common buildings, housing, and the city. Please note: the class has required meetings on both Tuesdays (5-6:20) and Fridays (2:30-5:50, with a break) beginning on Tuesday October 2nd. This course is part of the College Course Cluster program: Urban Design.
Instructor(s): L. Joyner Terms Offered: Autumn
Note(s): Consent is required to enroll in this class. Interested students should email the instructor (Luke Joyner, lukejo@uchicago.edu) to briefly explain their interest and any previous experience with the course topics. Please note: The course has required meetings on both Tuesdays (5-6:20 p.m.) and Fridays (2:30-5:50 p.m., with a break) beginning on Tuesday October 1. Students must attend first class to confirm enrollment.
Equivalent Course(s): ARTH 24190, ARTV 20210, GEOG 24190, AMER 24190, ARCH 24190

ENST 24191. City Imagined, City Observed. 100 Units.
This urban design studio course takes two distinct notions of the city as its starting point: grand, imaginative plans — utopian, unbuilt, semi-realized, real... both as aesthetic objects, and as ideas — and how the minute flows of day-to-day life, up from the smallest scale, enter into dialogue with little built and lived details, intended or not. With Chicago as context and canvas, we will dream both big and small, search both present and past, and draw precisely on both what we dream and what we experience... seeking not to dictate what the city will be, but to expand our sense of what a city can be. The studio work will proceed in two stages: individually developing ideal city plans, then breaking each others’ plans, using real observations and factors (and even spontaneous impulse) to complicate and rebuild them into something lovelier.
Instructor(s): L. Joyner Terms Offered: Winter
Note(s): Consent is required to enroll in this class. Priority will be given to students who have completed ARTH 24190.
Equivalent Course(s): GEOG 24191, AMER 24191, ARTH 24191, ARTV 20205, ARCH 24191

ENST 24196. Second Nature: New Models for the Chicago Park District. 100 Units.
The Chicago Park District seems to preserve “first nature” within the metropolitan field. But the motive for establishing this sovereign territory was hardly natural. Today, cultural change raises questions about the significance and operation of this immense network of civic spaces. What opportunities emerge as we rethink them? While this design studio focuses on the development of new model parks for Chicago, it can support students coming from a broad range of disciplines. Texts, seminar discussions, and field trips will complement and nourish the development of architectural proposals.
Instructor(s): A. Schachman Terms Offered: Spring
Equivalent Course(s): ARTH 24196, ARTV 20206, ARCH 24196, GEOG 24196
ENST 24201. China's Eco-Environmental Challenges and Society's Responses. 100 Units.

In nearly four decades of reform and opening policies, China's economic achievements have come at a high cost for its ecological environment; air pollution, water pollution, and soil contamination, among other problems, are facts of life for most Chinese citizens. In addition, China is now the world's biggest emitter of carbon dioxide and has recently acknowledged its contributions to global warming and the need for drastic mitigation of greenhouse gases. Facing these tremendous challenges, remarkable shifts in the way that Chinese society communicates and tackles these problems are occurring. This seminar will look, in particular, at relevant public debates, crucial policies, as well as popular initiatives and protest, to approach this wide topic. How is the relationship between humans/society and nature/environment conceptualized and communicated? Can we detect shifts from traditional to modern, even contemporary 'Chinese approaches'? And to what extent and how do political authorities, media, the general population and scientists in China interact in the face of the acknowledged risks that environmental pollution poses to communities, to China's (economic) development and, not least, to individual health and well-being. Basic knowledge about modern Chinese society and politics as well as Chinese reading skills are helpful, but not a strict requirement for participation in this course.

Instructor(s): A.L. Ahlers Terms Offered: Autumn
Equivalent Course(s): EALC 34201, EALC 24201

ENST 24600. Introduction to Urban Sciences. 100 Units.

This course is a grand tour of conceptual frameworks, general phenomena, emerging data and policy applications that define a growing scientific integrated understanding of cities and urbanization. It starts with a general outlook of current worldwide explosive urbanization and associated changes in social, economic and environmental indicators. It then introduces a number of historical models, from sociology, economics and geography that have been proposed to understand how cities operate. We will discuss how these and other facets of cities can be integrated as dynamical complex systems and derive their general characteristics as social networks embedded in structured physical spaces. Resulting general properties of cities will be illustrated in different geographic and historical contexts, including an understanding of urban resource flows, emergent institutions and the division of labor and knowledge as drivers of innovation and economic growth. The second part of the course will deal with issues of inequality, heterogeneity and (sustainable) growth in cities. We will explore how these features of cities present different realities and opportunities to different individuals and how these appear as spatially concentrated (dis)advantage that shape people's life courses. We will show how issues of inequality also have consequences at more macroscopic levels and derive the general features of population and economic growth for systems of cities and nations.

Instructor(s): Luis Bettencourt Terms Offered: Autumn
Prerequisite(s): STAT 22000
Equivalent Course(s): GEOG 34600, SOCI 20285, PBPL 24605, GEOG 24600

ENST 24660. Urban Geography. 100 Units.

This course examines the spatial organization and current restructuring of modern cities in light of the economic, social, cultural, and political forces that shape them. It explores the systematic interactions between social process and physical system. We cover basic concepts of urbanism and urbanization, systems of cities urban growth, migration, centralization and decentralization, land-use dynamics, physical geography, urban morphology, and planning. Field trip in Chicago region required. This course is part of the College Course Cluster, Urban Design.

Instructor(s): M. Conzen Terms Offered: Winter
Note(s): This course offered in even years.
Equivalent Course(s): GEOG 23500, GEOG 33500

ENST 24680. Introduction to Urban Planning. 100 Units.

The academic study of urban planning encompasses a range of issues dealing with cities, from urban design to governance, economic development, local politics, and place. The goal of this course is to provide a broad overview of urban planning theory and history while at the same time introducing students to basic GIS applications for urban planners. This format provides students with a better contextual understanding of the wide range of issues currently facing 21st century cities, and at the same time serves as an introduction to the everyday practice of urban planning. The course includes readings from prominent urban theorists, a discussion of the historical development of the urban planning profession in the US, and GIS exercises that allow students to apply their theoretical urban knowledge to real-world planning problems.

Instructor(s): Kevin Credit Terms Offered: Autumn
Equivalent Course(s): GEOG 34700, GEOG 24700

ENST 24701. U.S. Environmental Policy. 100 Units.

Making environmental policy is a diverse and complex process. Environmental advocacy engages different governmental agencies, congressional committees, and courts, depending on the issue. This course examines how such differentiation has affected policy making over the last several decades.

Instructor(s): R. Lodato Terms Offered: Autumn
Equivalent Course(s): LLSO 24901, PBPL 24701
ENST 24705. Energy: Science, Technology, and Human Usage. 100 Units.
This course covers the technologies by which humans appropriate energy for industrial and societal use, from steam turbines to internal combustion engines to photovoltaics. We also discuss the physics and economics of the resulting human energy system: fuel sources and relationship to energy flows in the Earth system; and modeling and simulation of energy production and use. Our goal is to provide a technical foundation for students interested in careers in the energy industry or in energy policy. Field trips required to major energy converters (e.g., coal-fired and nuclear power plants, oil refinery, biogas digester) and users (e.g., steel, fertilizer production). This course is part of the College Course Cluster program: Climate Change, Culture and Society.
Instructor(s): E. Moyer
Prerequisite(s): Knowledge of physics or consent of instructor.
Note(s): Not offered in Spring 2019. See GEOS 24750/ENSC 21150.
Equivalent Course(s): ENSC 21100, GEOS 24705, GEOS 34705

ENST 24750. Humans in the Earth System. 100 Units.
Human activities now have global-scale impact on the Earth, affecting many major biogeochemical cycles. One third of the Earth's surface is now used for production of food for humans, and CO2, the waste product of human energy use, now substantially affects the Earth's radiative balance. This course provides a framework for understanding humanity as a component of Earth system science. The course covers the Earth's energy flows and cycles of water, carbon, and nitrogen; their interactions; and the role that humans now play in modifying them. Both agriculture and energy technologies can be seen as appropriation of natural energy flows, and we cover the history over which human appropriations have become globally significant. The course merges geophysical and biological sciences and engineering, and includes lab sessions and field trips to agriculture, water management, and energy facilities to promote intuition. One year of university-level science is recommended.
Terms Offered: Spring
Equivalent Course(s): GEOS 24750, ENSC 21150, GEOS 34750

ENST 24756. Exploring the Resilient City. 100 Units.
In recent years, sub-national units of government have enacted meaningful policy plans in the wake of the ongoing failure of the international community to address global climate change. Cities in particular have shaped their plans to address the now-inevitable effects of climate change by adopting policies that emphasize resilience and environmental protection, without sacrificing economic growth, and with attention to the ongoing challenges of poverty and inequality. This course will take a comparative look at the policies adopted by cities on an international basis, while defining what it means to be a resilient city and how much the built environment can be adjusted to limit the environmental impact of densely populated metropolises. It will also consider what impact citizen activism and input had upon the shape of each plan and the direction that its policies took. Students will also be asked to consider what might be missing from each plan and how each plan could be improved to foster greater resiliency.
Instructor(s): R. Lodato Terms Offered: Winter
Equivalent Course(s): PBPL 24756

ENST 24776. International Environmental Policy. 100 Units.
Environmental issues have become a prominent part of the work of international organizations and their member nations. The international community has recognized the efficacy of multi-national agreements as a method for comprehensive solutions to problems that were once dealt with on a nation-by-nation basis. This course will address such topics as the Montreal Protocol, climate change agreements, and the Law of the Sea treaty, as well as the efforts being undertaken by some leading nations to address present-time environmental challenges.
Instructor(s): R. Lodato Terms Offered: Spring
Equivalent Course(s): PBPL 24776

ENST 25000. The Amazon: Literature, Culture, Environment. 100 Units.
This course proposes a cultural history of the Amazonian region. Through films, novels, visual arts, essays, manifestos, and works on cultural and environmental history, we will explore the history of Amazon from a range of perspectives. We will examine indigenous cultures and epistemologies, extractivist activities, environmental policies, contemporary literature and film, and a global imagination of the Amazon. Authors and projects may include Claudia Andujar, Gaspar de Carvajal, Bernardo Carvalho, Euclides da Cunha, Heitor Dhalia, Ciro Guerra, Milton Hatoum, Susanna Hecht, Alexander von Humboldt, Davi Kopenawa, Ailton Krenak, Chico Mendes, Daniel Munduruku, Lúcia Sá, Silvino Santos, Candance Slater, Mario Vargas Llosa, Eduardo Viveiros de Castro, Video in the Villages, among others.
Instructor(s): V. Saramago Terms Offered: Spring
Note(s): Taught in English. Materials available in English, Portuguese and Spanish.
Equivalent Course(s): LACS 25005, SPAN 35555, PORT 35000, PORT 25000, SIGN 26059, SPAN 25555, LACS 35005
ENST 25006. How Things Get Done in Cities and Why. 100 Units.
Innovation. Prosperity. Democracy. Diversity. Cities long have been lauded as unique incubators of these social features. In contrast to the national level, the smaller scale and dense diversity of cities is thought to encourage the development of civic solutions that work for the many. But cities are inhabited by distinct groups of people with divergent interests and varied beliefs about how to address countless urban issues, such as creating jobs, delivering education, ensuring safe neighborhoods, promoting environmental sustainability, and taking care of the vulnerable. Many groups and organizations have an interest in the outcomes of these processes. Some take action to try to shape them to their own advantage, while others have few chances to make themselves heard. This course examines the social and political dynamics that undergird possible avenues for creating social change in cities, including interest representation, decision-making, and inclusion/exclusion. We will draw insights from multiple disciplines and explore a variety of substantive areas, such as housing, public safety, economic development, education, and the provision of social welfare. This course is part of the College Course Cluster program: Urban Design.
Terms Offered: TBD
Equivalent Course(s): SSAD 21100, LLSO 21100, SOCI 20294, PBPL 25006

ENST 25014. Introduction to Environmental History. 100 Units.
How have humans interacted with the environment over time? This course introduces students to the methods and topics of environmental history by way of classic and recent works in the field: Crosby, Cronon, Worster, Russell, and McNeill, etc. Major topics of investigation include preservationism, ecological imperialism, evolutionary history, forest conservation, organic and industrial agriculture, labor history, the commons and land reform, energy consumption, and climate change. Our scope covers the whole period from 1492 with case studies from European, American, and British imperial history.
Instructor(s): F. Albritton Jonsson Terms Offered: Winter
Equivalent Course(s): HIPS 25014, CHSS 35014, HIST 25014, HIST 35014

ENST 25114. Natural History and Empire, circa 1500-1800. 100 Units.
This course will examine natural history—broadly defined as a systematic, observational body of knowledge devoted to describing and understanding the physical world of plants, animals, natural environments, and (sometimes) people-in the context of European imperial expansion during the early modern era. Natural history was upended by the first European encounters with the New World. The encounter with these new lands exposed Europeans for the first time to unknown flora and fauna, which required acute empirical observation, collection, cataloguing, and circulation between periphery and metropole in order to understand their properties and determine their usefulness. As the Spanish, Portuguese, British, French, and Dutch competed with one another to establish overseas trade and military networks in the sixteenth, seventeenth, and eighteenth centuries, they also competed over and shared information on natural resources. The course will combine lecture and discussion and mix primary source readings on natural history in the early modern world with modern historical writings. Though the readings skew a bit toward Britain and the British Atlantic world, every effort has been made to include texts and topics from multiple European and colonial locales. Topics and themes will include early modern sources of natural history from antiquity and their (re)interpretation in imperial context; early modern collecting cultures and cabinets of curiosities; Linnaeus and the origins of
Instructor(s): J. Niermeier-Dohoney Terms Offered: Autumn
Equivalent Course(s): HIST 25114, HIPS 25114

ENST 25115. Francis Bacon's Philosophy of Nature. 100 Units.
Historians of science have traditionally regarded Francis Bacon (1561-1626) as one of the most prominent seventeenth-century champions of induction, empiricism, and experimental methodology. While these are perhaps his most important contributions to natural philosophy, Bacon and his adherents also exerted a profound influence on Western notions of power over nature and of the possibilities of alteration, manipulation, and exploitation of the natural world. This course will examine some of Bacon's principal works ("The New Organon", "The Advancement of Learning", "The New Atlantis", and "The Great Instauration") in order to first develop an understanding of Bacon's philosophical positions and the changing landscape of natural philosophy in the seventeenth century. Then, we will examine the implications of Bacon's philosophy from his lifetime to the present, focusing particularly on the rise of artisanal and craft knowledge; the emergence of civil institutions for cooperative knowledge making; utopian and cornucopian conceptions of the natural economy; science as the manipulation of nature; the competing and complementary notions of dominion over nature versus environmental stewardship; the practical uses of natural materials during European imperial expansion; the origins of industrialization and technological development; and his influence on modern science, politics, economics, and environmentalism.
Instructor(s): J. Niermeier-Dohoney Terms Offered: Winter
Equivalent Course(s): HIST 25115, HIPS 25115
ENST 25116. Utopia, Dystopia, and the Apocalypse in Western Culture. 100 Units.
This course will examine how Western society has asked and answered questions about potential futures throughout its history. We will look especially at ways in which these questions have been explored through utopian, dystopian, and apocalyptic scenarios within religious, scientific, and political cultures. These narratives have denoted moral righteousness, critiqued the hubris of science and industrialization, and advocated or denounced systems of governance and social organization. They also reveal historical assumptions about human nature, progress, and the relationship between rationality and irrationality. Topics will include Biblical apocalypticism and its influence in the medieval and modern worlds; medieval and early modern millenarianism or the active pursuit of the apocalypse; early modern utopianism and its influence on later utopian writing; modern economic prognostication; modern utopian and dystopian science fiction in literature, film, and television; nineteenth- and twentieth-century socialist and nationalist utopianism and totalitarianism; global catastrophic risks such as asteroid impacts, pandemics, climate change, ecological degradation, and nuclear war; and the increasing importance of science in “futurology” or “future studies,” a burgeoning field in the postwar era.
Instructor(s): J. Niermeier-Dohoney Terms Offered: Spring
Equivalent Course(s): RLST 25116, HIPS 25116, HIST 25116

ENST 25117. Natural History of Humans/Human History of Nature. 100 Units.
In this course, we will think broadly about human history as a type of natural history and the recent history of nature as a part of the human narrative. Students will be introduced to the concept of “deep time,” its discovery by geologists and biologists in the 18th and 19th centuries, and its impact on human history. Topics will include 16th- and 17th-century historiography and Biblical exegesis, geological theories of Hutton, Cuvier, and Lyell, and biological theories of Lamarck and Darwin. We will examine how certain modern sciences have affected historians’ approaches. Topics will include how the structure and function of the brain affected kinship development, language acquisition, and social bonding; interpretations of “human nature” by theology, philosophy, anthropology, and psychology; massive time scales and intergenerational governing, justice, and ethics; and geography’s role in shaping civilizations. Finally, we will consider how the rising human impact over natural earth systems may change the way human and civilizational history will be studied going forward. Topics include anthropogenic changes to the biosphere through hunting and agriculture in the ancient world and the globalization of communicable diseases and invasive plant and animal species after 1492; the impact of climate change on modern civilization; the potential that humans are responsible for a new geological epoch; and what “history” looks like without humans.
Instructor(s): J. Niermeier-Dohoney Terms Offered: Spring
Equivalent Course(s): HIPS 25117, HIST 25117

ENST 25427. The Global Atomic Age. 100 Units.
The nuclear bombings of Hiroshima and Nagasaki 75 years ago was the advent of the atomic age. Paradoxically, the same technology that had unleashed infernos on the Japanese population was heralded in other contexts as utopia in waiting. This course examines how the atom transformed global politics and remade social life, culture, and even the way people experienced emotions. We will use a broad range of sources—excluding but not limited to historical scholarship, film, poetry, and architecture—to examine the global expansion of nuclear energy, weapons proliferation and militarization, gender and the politics of reproduction, decolonization, nuclear fear and disasters, labor at atomic facilities and in uranium mines, environmental laws, and the problem of waste, and nuclear mass politics. Assignments: three essays (1,000-1,500 words each) due in weeks three, six, and nine, which use course-related materials to respond to an assigned prompt. In lieu of a final exam, a portfolio of work from the quarter and a short reflective essay (1,000-1,250 words).
Instructor(s): T. Kahle Terms Offered: Winter
Equivalent Course(s): HIPS 25427, HIST 25427

ENST 25460. Environmental Effects on Human Health. 100 Units.
Given the increasing human population in urban areas, the effects of urbanization and the urban environment on human health can be particularly profound. In this course, students will be introduced to environmental health issues, research, policy, and advocacy. An overview of fundamental concepts in environmental health will be paired with case studies based on current local issues and topical research. Guest-led lectures and discussions will connect biological, chemical, and physical exposures to their real effects on human communities.
Instructor(s): Alison Anastasio Terms Offered: Spring

ENST 25500. Biogeography. 100 Units.
This course examines factors governing the distribution and abundance of animals and plants. Topics include patterns and processes in historical biogeography, island biogeography, geographical ecology, areography, and conservation biology (e.g., design and effectiveness of nature reserves).
Instructor(s): B. Patterson (odd years, lab). L. Heaney (even years, discussion) Terms Offered: Winter
Prerequisite(s): Three quarters of a Biological Sciences Fundamentals sequence and a course in either ecology, evolution, or earth history; or consent of instructor
Equivalent Course(s): EVOL 45500, GEOG 25500, BIOS 23406, GEOG 35500
ENST 25705. Climate Ethics. 100 Units.
Anthropogenic climate change is the largest challenge facing human civilization. Its physical and temporal scale and unprecedented complexity at minimum require extensions of existing ethical systems, if not new ethical tools. In this course we will examine how religious and philosophical ethical systems respond to the vast temporal and spatial scales of climate change. For instance, common principles of environmental ethics such as justice and responsibility are often reimagined in climate ethics even as they are central to the ethical analysis of its effects. In the course, we will take a comparative approach to environmental ethics, examining perspectives from secular Western philosophy, Christianity (Catholic and Protestant), Buddhist, and Indigenous thought. We will also look at a variety of ethical methods. Throughout the course we will focus on communication about climate change as well as articulating rigorous ethical arguments about its causes and implications.
Instructor(s): Sarah Fredericks Terms Offered: Spring
Equivalent Course(s): RLST 25703

ENST 25910. Introduction to Location Analysis. 100 Units.
Understanding the location of business activities - agricultural, industrial, retail, and knowledge-based - has long been a focus for economic geographers, regional scientists, and urban planners. This course traces the key theories and conceptual models that have been developed over time to explain why economic activities tend to locate where they do. To introduce and explain these theories, this course covers several foundational concepts in economic geography and urban planning, such as: bid-rent theory, locational triangulation, various models of urban structure and growth, urban market areas, transportation, economic restructuring, and the "back-to-the-city" movement. This course incorporates several GIS exercises to teach students the basic principles of location optimization and to help illuminate the foundational theoretical principles of economic geography.
Instructor(s): K. Credit Terms Offered: Spring
Equivalent Course(s): GEOG 25900, GEOG 35900

ENST 26003. Chicago by Design. 100 Units.
This course examines the theory and practice of urban design at the scale of block, street, and building-the pedestrian realm. Topics include walkability; the design of streets; architectural style and its effect on pedestrian experience; safety and security in relation to accessibility and social connection; concepts of urban fabric, repair, and placemaking; the regulation of urban form; and the social implications of civic spaces. Students will analyze normative principles and the debates that surround them through readings and discussion as well as firsthand interaction with the urbanism of Chicago. This course is part of the College Course Cluster, Urban Design.
Instructor(s): E. Talen Terms Offered: Spring
Equivalent Course(s): GEOG 24300, PBPL 26003, SOSC 26003

ENST 26005. Cities by Design. 100 Units.
This course examines the theory and practice of city design-how, throughout history, people have sought to mold and shape cities in pre-determined ways. The form of the city is the result of myriad factors, but in this course we will hone in on the purposeful act of designing cities according to normative thinking-ideas about how cities ought to be. Using examples from all time periods and places around the globe, we will examine how cities are purposefully designed and what impact those designs have had. Where and when has city design been successful, and where has it resulted in more harm than good?
Instructor(s): Emily Talen Terms Offered: Autumn
Equivalent Course(s): PBPL 26005, GEOG 26005

ENST 26100. Roots of the Modern American City. 100 Units.
This course traces the economic, social, and physical development of the city in North America from pre-European times to the mid-twentieth century. We emphasize evolving regional urban systems, the changing spatial organization of people and land use in urban areas, and the developing distinctiveness of American urban landscapes. All-day Illinois field trip required. This course is part of the College Course Cluster, Urban Design.
Instructor(s): M. Conzen Terms Offered: Autumn
Note(s): This course offered in odd years.
Equivalent Course(s): HIST 38900, GEOG 26100, GEOG 36100, HIST 28900

ENST 26255. Environmental Justice Field Research Project I. 100 Units.
This two-quarter sequence will expose students to real-world policy-making questions and field-based research methodologies to design an environmentally based research project, collect data, conduct analysis, and present findings. In the first quarter, we will follow a robust methodological training program in collaboration with University partners to advance the foundations laid elsewhere in the public policy studies program. In the second quarter, this expertise in a full range of research methodologies will be put into practice to tackle public policy problems in the city and neighborhoods that surround the University. PBPL 26255 and PBPL 26355 satisfy the Public Policy practicum Windows and Methods requirements.
Instructor(s): Lodato, R. Terms Offered: Autumn
Prerequisite(s): Students taking this course to meet the Public Policy practicum requirement must take both courses.
Equivalent Course(s): PBPL 26255
ENST 26330. ReRooting: Cultivating the Ecology of Place. 100 Units.
At its core, "ReRooting: Cultivating the Ecology of Place" will unpack the conceptual underpinnings as well as the practical applications of urban ecological theory as applied to the interplay between humans, biological systems, and the abiotic environment. While the field of urban ecology shares many features with the biological science of ecology, it also emphasizes linkages across the social, economic, and physical sciences with the humanities. However, in order to disentangle the dynamic complexity of human-environment relations in cities as related to the interconnected urban biophysical, socio-economic, and political processes of urban systems, we will examine how concepts in natural science ecology, environmental studies, geography, urban planning, architecture, art and design, sociology, and public policies intersect. Additionally, we will use the Perry Ave Commons as "living laboratories" and apply these theories and concepts to laboratory exercises, field observation, case studies, and research on contemporary urban sustainability initiatives.
Instructor(s): Emmanuel Pratt Terms Offered: Autumn
Note(s): This course will meet at the Smart Museum at the University of Chicago and at the Sweet Water Foundation: 5749 S Perry Ave
Equivalent Course(s): GEOG 26330

ENST 26355. Environmental Justice Field Research Project II. 100 Units.
This two-quarter sequence will expose students to real-world policy-making questions and field-based research methodologies to design an environmentally based research project, collect data, conduct analysis, and present findings. In the first quarter, we will follow a robust methodological training program in collaboration with University partners to advance the foundations laid elsewhere in the public policy studies program. In the second quarter, this expertise in a full range of research methodologies will be put into practice to tackle public policy problems in the city and neighborhoods that surround the University. PBPL 26255 and PBPL 26355 satisfy the Public Policy practicum Windows and Methods requirements.
Instructor(s): Lodato, R. Terms Offered: Winter
Prerequisite(s): Open only to Public Policy majors; PBPL 26255-26355 must be taken in sequence.
Equivalent Course(s): PBPL 26355

ENST 26433. Practicum in Environmental Management. 100 Units.
Students in this course will explore and evaluate aspects of environmental sustainability on campus, through scholarly research, interviews, surveys and data collection and analysis. Students will apply concepts and tools from environmental studies, public policy and economics to evaluate and make recommendations for enhancing the environmental performance of campus athletics operations and events. The research will be conducted in collaboration with the Office of Sustainability and Department of Physical Education and Athletics. Prerequisite: PBPL 200 or ECON 198 or equivalent
Instructor(s): S. Sabina Terms Offered: Autumn
Prerequisite(s): Prerequisite: PBPL 200 or ECON 198 or equivalent
Note(s): Not offered in 19-20
Equivalent Course(s): PBPL 26433

ENST 26500. Environmental Economics. 100 Units.
This course applies theoretical and empirical economic tools to environmental issues. We discuss broad concepts such as externalities, public goods, property rights, market failure, and social cost-benefit analysis. These concepts are applied to areas that include nonrenewable resources, air and water pollution, solid waste management, and hazardous substances. We emphasize analyzing the optimal role for public policy.
Instructor(s): S. Shaikh
Prerequisite(s): ECON 20100
Equivalent Course(s): ECON 26500, PBPL 32631

ENST 26511. Cities from Scratch: The History of Urban Latin America. 100 Units.
Latin America is one of the world's most urbanized regions, and its urban heritage long predates European conquest. And yet the region's cities are most often understood through the lens of North Atlantic visions of urbanity, many of which fit poorly with Latin America's historical trajectory, and most of which have significantly distorted both Latin American urbanism and our understandings of it. This course takes this paradox as the starting point for an interdisciplinary exploration of the history of Latin American cities in the nineteenth and twentieth centuries, focusing especially on issues of social inequality, informality, urban governance, race, violence, rights to the city, and urban cultural expression. Readings will be interdisciplinary, including anthropology, sociology, history, fiction, film, photography, and primary historical texts.
Instructor(s): B. Fischer Terms Offered: Winter
Prerequisite(s): Some knowledge of Latin America or urban studies helpful.
Equivalent Course(s): HIST 26511, HIST 36511, LACS 26510, LACS 36510
ENST 26530. Environment, Agriculture, and Food: Economic and Policy Analysis. 100 Units.

The connections between environment, agriculture, and food are inherent in our social, cultural, and economic networks. Land use, natural resource management, energy balances, and environmental impacts are all important components in the evolution of agricultural systems. Therefore it is important to develop ways in which to understand these connections in order to design effective agricultural programs and policies. This course is designed to provide students with guidance on the models and tools needed to conduct an economic research study on the intersecting topics of environment, agriculture, and food. Students learn how to develop original research ideas using a quantitative and applied economic policy analysis for professional and scholarly audiences. Students collect, synthesize, and analyze data using economic and statistical tools. Students provide outcomes and recommendations based on scholarly, objective, and policy relevant research rather than on advocacy or opinions, and produce a final professional-quality report for a workshop presentation and publication. This small seminar course is open by instructor consent to undergraduate and graduate students who meet the prerequisites. For consideration, please submit a one-page proposal of research to pge@uchicago.edu.

Instructor(s): S. Shaikh
Terms Offered: Winter
Prerequisite(s): ECON 20000 or ECON 20100 or PBPL 20000 or PBPL 22200 (or equivalent), STAT 22000 or STAT 23400 or PBPL 26400 (or equivalent); for ECON Enrollment: ECON 20000 and ECON 20100, STAT 23400
Equivalent Course(s): PPHA 32510, ECON 26530, PBPL 26530

ENST 26531. Environment, Agriculture, and Food: Advanced Economic and Policy Analysis. 100 Units.

This course is an extension of ENST 26530 but also stands alone as a complete course itself. Students don't need to take ENST 26530 to enroll in this course. This small seminar course is open by instructor consent to undergraduate and graduate students who meet the prerequisites. For consideration, please submit a one-page proposal of research to pge@uchicago.edu.

Instructor(s): S. Shaikh
Terms Offered: Spring
Prerequisite(s): ECON 20000 or ECON 20100 or PBPL 20000 or PBPL 22200 (or equivalent), STAT 22000 or STAT 23400 or PBPL 26400 (or equivalent); for ECON Enrollment: ECON 20000 and ECON 20100, STAT 23400
Equivalent Course(s): PBPL 26531, ECON 26540, PPHA 32520

ENST 27125. Voices of Alterity and the Languages of Immigration. 100 Units.

This course investigates the individual experience of immigration: how do immigrants recreate themselves in this alien world in which they seem to lose part of themselves? How do they find their voice and make a place for themselves in their adoptive homes? If in the new world the immigrant becomes a new person, what meanings are still carried in traditional values and culture? How do they remember their origins and record new experiences?

Instructor(s): Angelina Ilieva
Terms Offered: Spring
Enrollment is based on acceptance into the Chicago Studies Quarter Program.
Equivalent Course(s): CMLT 27125, ENGL 27125, REES 29025, HIST 27710, PBPL 27125

ENST 27150. Urban Design with Nature: Assessing Social and Natural Realms in the Calumet Region. 100 Units.

This course will use the Calumet region as a laboratory for evaluating the social, environmental, and economic effects of alternative forms of human settlement. Students will be introduced to the basics of geographic information systems (GIS) and use GIS to map the Calumet region’s "place types" - human habitats that vary along an urban-to-rural transect, as well as the ecosystem services provided by the types. They will then evaluate these place types using a range of social, economic and environmental criteria. In this way, students will evaluate the region’s potential to simultaneously realize economic potential, protect environmental health, and provide social connectivity.

Terms Offered: Spring

Note(s): Enrollment is based on acceptance into the Chicago Studies Quarter Program.
Equivalent Course(s): CMLT 27125, ENGL 27125, REES 29025, HIST 27710, PBPL 27125

ENST 27155. Urban Design with Nature. 100 Units.

This course will use the Chicago region as a laboratory for evaluating the social, environmental, and economic effects of alternative forms of human settlement. Students will be introduced to the basics of geographic information systems (GIS) and use GIS to map Chicago’s "place types" - human habitats that vary along an urban-to-rural transect, as well as the ecosystem services provided by the types. They will then evaluate these place types using a range of social, economic and environmental criteria. In this way, students will evaluate the region’s potential to simultaneously realize economic potential, protect environmental health, and provide social connectivity. This course is part of the College Course Cluster program: Urban Design.

Instructor(s): Sabina Shaikh and Emily Talen
Terms Offered: Autumn
Prerequisite(s): Third or fourth-year standing

Note(s): Students who have taken ENST 27150: Urban Design with Nature: Assessing Social and Natural Realms in the Calumet Region in the Spring of 2018 may not enroll in this course.
Equivalent Course(s): BPRO 27155, PBPL 27156, GEOG 27155

ENST 27210. Where We Come From: Methods & Materials in the Study of Immigration. 100 Units.

This course provides an interactive survey of methodologies that engage the experiences of immigrants in Chicago. Exploring practices ranging from history to fiction, activism to memorialization, this course will introduce students to a variety of the ways that immigrants and scholars have approached the Second City.

Instructor(s): William Nickell
Terms Offered: Spring
Enrollment is based on acceptance into the Chicago Studies Quarter Program.
Equivalent Course(s): PBPL 27210, REES 24417, HIST 27712
ENST 27221. Sustainable Urbanism. 100 Units.
This course explores cutting-edge solutions to today's interrelated challenges of decarbonizing the economy, reversing the obesity epidemic, and replacing sprawl. In addition to learning about the current state of sustainable urban planning and design, students will apply to the Calumet region a collection of future-forward urban design strategies to build prosperous and sustainable urban communities that can thrive for years to come. Topics include community organizing; public health, safety, and welfare; governance; neighborhood planning and design; stormwater management; density, and net-zero-energy building design. While not a studio class, there will be opportunities to practice spatial design drawing, community engagement tactics, and sustainability metrics.
Instructor(s): Doug Farr Terms Offered: TBD
Prerequisite(s): Enrollment is based on acceptance into the Calumet Quarter Program.

ENST 27325. Urban Ecology in the Calumet Region. 100 Units.
This course will give students a strong foundation in the local ecology of the Calumet. Students will use local research and habitats to understand fundamental concepts in ecology and the scientific method. Students will explore some of these habitats during field trips with scientists and practitioners. The course focus will be on urban ecology in the region, whether these fundamental ecological concepts are applicable, what other factors need to be considered in the urban ecosystem, and the role humans have in restoring natural and managing novel ecosystems, among other topics.
Terms Offered: TBD
Note(s): Enrollment is based on acceptance into the Calumet Quarter program. Not offered in 2019-20.
Equivalent Course(s): PBPL 27325, GEOG 27325

ENST 27330. Spaces of Hope: The City and Its Immigrants. 100 Units.
The city is the site where people of all origins and classes mingle, however reluctantly and agonistically, to produce a common if perpetually changing and transitory life." (David Harvey) This course will use the urban studies lens to explore the complex history of immigration to Chicago, with close attention to communities of East European origin. Drawing on anthropological theory and ethnographic materials, we will study the ways in which the city and its new citizens transform one another.
Instructor(s): Nada Petkovic Terms Offered: Spring. Enrollment is based on acceptance into the Chicago Studies Quarter Program.
Note(s): Enrollment is based on acceptance into the Chicago Studies Quarter Program.
Equivalent Course(s): PBPL 27330, REES 21500, HIST 27713

ENST 27400. Epidemiology and Population Health. 100 Units.
This course does not meet requirements for the biological sciences major. Epidemiology is the study of the distribution and determinants of health and disease in human populations. This course introduces the basic principles of epidemiologic study design, analysis, and interpretation through lectures, assignments, and critical appraisal of both classic and contemporary research articles.
Instructor(s): D. Lauderdale Terms Offered: Autumn
Prerequisite(s): STAT 22000 or other introductory statistics highly desirable. For BIOS students-completion of the first three quarters of a Biological Sciences Fundamentals sequence.
Equivalent Course(s): HLTH 20910, STAT 22810, PPHA 36410, PBHS 30910

ENST 27534. The Aspirational City: Chicago's Multicultural Communities. 100 Units.
No city has meant more to the hopes and dreams of more divergent groups of Americans than Chicago. The Aspirational City: Chicago's Multicultural Communities will explore the histories of Chicago's various racial, ethnic and marginalized communities and the ways in which they have sought to fashion the destinies of themselves, their communities, and the city of Chicago. The course is a weekly seminar open to both undergraduate and graduate students.
Terms Offered: Spring
Equivalent Course(s): HLTH 20910, STAT 22810, PPHA 36410, PBHS 30910

ENST 27900. Climate Change in Media and Design. 100 Units.
If meteorological data and models show us that climate change is real, art and literature explore what it means for our collective human life. This is the premise of many recent films, novels, and artworks that ask how a changing climate will affect human society. In this course, we will examine the aesthetics of climate change across media, in order to understand how narrative, image, and even sound help us witness a planetary disaster that is often imperceptible. Rather than merely analyzing or theorizing various futures, this course will prepare students in hands-on methods of "speculative design" and "critical making." Each Tuesday, we will study how art and literature draw on the specific capacities of written and visual media to represent climate impacts, and how new humanities research is addressing climate change. Each Thursday, we will participate in short artistic exercises that explore futures of each area. These exercises include future object design, bodymapping and story circles, tabletop gameplay, and serious game design. Throughout the quarter, guest speakers from across the humanities, sciences, and social sciences will visit the class to speak about how their disciplines are working to understand and mitigate climate impacts. The most substantial work of the quarter will be an ambitious multimedia or transmedia project about one of the core course topics to be completed in a team.
Instructor(s): P. Jagoda, B. Morgan Terms Offered: Winter
Prerequisite(s): Third- or fourth-year standing
Equivalent Course(s): ENGL 27904, BPRO 27900, CMST 27814, MAAD 21900
ENST 28601. Ideas of Nature I. 100 Units.
Nature is, and has been, a fundamental category in human thought. Yet Arthur Lovejoy (1935) enumerated sixty-six senses in which the word had been used in European literature and philosophy. We examine the roles that the (nominally continuous) category of "nature" played in sources such as ancient religious texts, Greek and Roman philosophical writings, and medieval poetry and theology.
Instructor(s): A. Gugliotta Terms Offered: Spring
Prerequisite(s): ECON 20900, 21000, or 26500; or ENST 26500
Note(s): ENST 28601 and 28602 may be taken individually in any order. This course is offered in alternate years. Equivalent Course(s): HIPS 29001, MDVL 28601

ENST 28702. Introduction to GIS and Spatial Analysis. 100 Units.
This course provides an introduction and overview of how spatial thinking is translated into specific methods to handle geographic information and the statistical analysis of such information. This is not a course to learn a specific GIS software program, but the goal is to learn how to think about spatial aspects of research questions, as they pertain to how the data are collected, organized and transformed, and how these spatial aspects affect statistical methods. The focus is on research questions relevant in the social sciences, which inspires the selection of the particular methods that are covered. Examples include spatial data integration (spatial join), transformations between different spatial scales (overlay), the computation of "spatial" variables (distance, buffer, shortest path), geovisualization, visual analytics, and the assessment of spatial autocorrelation (the lack of independence among spatial variables). The methods will be illustrated by means of open source software such as QGIS and R.
Instructor(s): M. Kolak Terms Offered: Spring
Equivalent Course(s): GEOG 28702, GEOG 38702

ENST 28800. Readings in Spatial Analysis. 100 Units.
This independent reading option is an opportunity to explore special topics in the exploration, visualization and statistical modeling of geospatial data.
Instructor(s): K. Credit and M. Kolak Terms Offered: Autumn Spring Winter. Students are required to submit the College Reading and Research Course Form. Available for either quality grades or for P/F grading.
Note(s): By permission of instructor only.
Equivalent Course(s): GEOG 38700, GEOG 28700

ENST 28900. Environmental and Science Policy. 100 Units.
With a strong emphasis on the fundamental physics and chemistry of the environment, this course is aimed at students interested in assessing the scientific repercussions of various policies on the environment. The primary goal of the class is to assess how scientific information, the economics of scientific research, and the politics of science interact with and influence public policy development and implementation.
Equivalent Course(s): PBPL 28900

ENST 28925. Health Impacts of Transportation Policies. 100 Units.
Governments invest in transport infrastructure because it encourages economic growth and mobility of people and goods, which have direct and indirect benefits to health. Yet, an excessive reliance on motorized modes of transport harms population health, the environment, and social well-being. The impact on population health is substantial: Globally, road traffic crashes kill over 1.3 million annually. Air pollution, to which transport is an important contributor, kills another 3.2 million people. Motorized modes of transport are also an important contributor to sedentary lifestyles. Physical inactivity is estimated to cause 3.2 million deaths every year, globally. This course will introduce students to thinking about transportation as a technological system that affects human health and well-being through intended and unintended mechanisms. The course will examine the complex relationship between transportation, land use, urban form, and geography, and explore how decisions in other sectors affect transportation systems, and how these in turn affect human health. Students will learn to recognize how the system level properties of a range of transportation systems (such as limited-access highways, urban mass transit, inter-city rail) affect human health.
Terms Offered: Autumn
Equivalent Course(s): PBPL 28925

ENST 28980. Readings in Urban Planning and Design. 100 Units.
This independent reading option is an opportunity to explore contemporary debates and theoretical arguments involved in the planning and design of cities.
Instructor(s): E. Talen Terms Offered: Autumn Spring Winter. Students are required to submit the College Reading and Research Course Form. Available for either quality grades or for P/F grading.
Note(s): By permission of instructor only.
Equivalent Course(s): GEOG 28900, GEOG 38900
ENST 29000. Energy and Energy Policy. 100 Units.
This course shows how scientific constraints affect economic and other policy decisions regarding energy, what energy-based issues confront our society, how we may address them through both policy and scientific study, and how the policy and scientific aspects can and should interact. We address specific technologies, both those now in use and those under development, and the policy questions associated with each, as well as with more overarching aspects of energy policy that may affect several, perhaps many, technologies.
Instructor(s): S. Berry, G. Tolley Terms Offered: TBD. May be offered 2019-20
Prerequisite(s): PQ: Third- or fourth-year standing. For ECON majors who want ECON credit for this course (ECON 26800); PQ is ECON 20100.
Equivalent Course(s): CHSS 37502, PPHA 39201, PBPL 29000, PSMS 39000, BPRO 29000, ECON 26800

ENST 29252. The Global Life of Things. 100 Units.
We are often told that the market has taken over all aspects of our social lives. The effects of this process can be seen in the financialization of the economy, the deregulation of labor, and the exploitation of natural resources. Goods are produced on one side of the world and consumed in another. Even college students are seen as investments that accrue value. How did this happen? This course will examine the deep history of how so much of the world became commodities. Focusing primarily on the seventeenth to the nineteenth centuries, we will ask how work, time, land, money, and people were commodified. We will also consider how historians and anthropologists have told the history of global capitalism through particular commodities, including sugar, cotton, meat, grain and mushrooms. Readings will span western Europe, India, the Atlantic World, Chicago, and contemporary Japan. Periodically, we will reflect on how these histories bear on questions of labor, gender, and the environment in the present day.
Instructor(s): O. Cussen Terms Offered: Spring
Equivalent Course(s): HIST 29525, GLST 29525

ENST 29257. The Spatial History of Nineteenth-Century Cities: Tokyo, London, New York. 100 Units.
The late-nineteenth century saw the transformation of cities around the world as a result of urbanization, industrialization, migration, and the rise of public health. This course will take a spatial history approach; that is, we will explore the transformation of London, Tokyo, and New York over the course of the nineteenth century by focusing on the material “space” of the city. For example, where did new immigrants settle and why? Why were there higher rates of infectious disease in some areas than in others? How did new forms of public transportation shape the ability to move around the city, rendering some areas more central than others? To explore questions such as these, students will be introduced to ArcGIS in four lab sessions and asked to develop an original research project that integrates maps produced in Arc. No prior ArcGIS experience is necessary, although students will be expected to have familiarity with Microsoft Excel and a willingness to experiment with digital methods. Assignments: Discussion posts, homework (mapping), and a final research project.
Instructor(s): S. Burns Terms Offered: Autumn
Note(s): Making History courses forgo traditional paper assignments for innovative projects that develop new skills with professional applications in the working world. Open to students at all levels, but especially recommended for 3rd- and 4th-yr students.
Equivalent Course(s): EALC 29527, HIST 29527, EALC 39527, GLST 29527, HIST 39527

ENST 29700. Reading and Research. 100 Units.
This course is a reading and research course for independent study not related to BA research or BA paper preparation.
Prerequisite(s): Consent of faculty supervisor and program director Note(s): Students are required to submit the College Reading and Research Course Form. This course may be counted as one of the electives required for the major.
Terms Offered: Autumn,Spring,Winter
Prerequisite(s): Consent of faculty supervisor and program director
Note(s): Students are required to submit the College Reading and Research Course Form. This course may be counted as one of the electives required for the major.

ENST 29701. Readings and Research: Working Group in Environment, Agriculture, and Food (EAF) 100 Units.
This course consists of participation in the Environment, Agriculture, and Food Group in a role assigned by the instructor.
Instructor(s): S. Shaikh Terms Offered: Winter
Prerequisite(s): Registration by instructor consent only
Note(s): Please email Sabina Shaikh at sabina@uchicago.edu.
Equivalent Course(s): PBPL 29701

ENST 29720. Reading and Research: Calumet. 100 Units.
The Program on the Global Environment will be hosting many interesting guest speakers during the Calumet Quarter, and this readings course will be dedicated primarily to the discussion of relevant articles written by the speakers. This will acquaint students with literature on a variety of topics ranging from food security to wetlands ecology to conservation theory. Students will be expected to discuss the articles, drawing on knowledge gained in the three core Calumet courses. Students will also attend the guest presentations and write short responses to the lectures.
Instructor(s): Staff Terms Offered: Spring
Prerequisite(s): Enrollment is based on acceptance into Calumet Quarter Program.
ENST 29801. BA Colloquium I. 100 Units.
This colloquium is designed to aid students in their thesis research. Students are exposed to different conceptual frameworks and research strategies. The class meets weekly.
Instructor(s): Suchismita Das
Terms Offered: Autumn
Prerequisite(s): Students must have an approved topic proposal and a faculty reader
Note(s): Required of students with fourth-year standing who are majoring in Environmental Studies.

ENST 29802. BA Colloquium II. 100 Units.
This colloquium assists students in conceptualizing, researching, and writing their BA theses.
Instructor(s): Staff
Terms Offered: Winter
Prerequisite(s): Open only to students with fourth-year standing who are majoring in Environmental Studies

ENST 29900. B. A. Thesis (Reading and Research) 100 Units.
This is a reading and research course for independent study related to BA research and BA thesis preparation.
Instructor(s): Staff
Terms Offered: Winter, Spring
Prerequisite(s): Consent of instructor and program director
Note(s): Students are required to submit the College Reading and Research Course Form.
Font Notice
This document should contain certain fonts with restrictive licenses. For this draft, substitutions were made using less legally restrictive fonts. Specifically:

Times was used instead of Trajan.
Times was used instead of Palatino.

The editor may contact Leepfrog for a draft with the correct fonts in place.