

# SUSTAINABILITY COURSE INVENTORY - 2019



**Penn**  
Sustainability

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# INTRODUCTION

Through its research, teaching, and operational practices, Penn is dedicated to promoting a sustainable culture and implementing environmentally conscious policies. Five years after releasing its original *Climate Action Plan*, the University of Pennsylvania announced the launch of *Climate Action Plan 2.0* in October 2014. The University will release its *Climate and Sustainability Action Plan 3.0* in the fall of 2019, with a continued focus on promoting sustainability in academics

Some of the most significant achievements of the Climate Action Plan have come inside the classroom. Penn now offers more than 300 courses related to sustainability. The Integrating Sustainability Across the Curriculum program has incorporated sustainability into 20 new and 43 existing courses through the collaboration of 74 faculty and 40 students since the program launch in 2012. Other programs and degree offerings, including a Sustainability & Environmental Management minor, a Master in Environmental Building Design, and the Vagelos Integrated Program in Energy Research, have furthered Penn's goal of integrating sustainability into coursework.

This inventory highlights and advances this goal of expanding the awareness and availability of information about sustainability courses at Penn. The guide is organized alphabetically by School and then by Department with cross-listed courses in grey italics. Please consult the course catalog for full descriptions of the courses and Penn InTouch's course registration site to confirm that the course is currently being offered.

This is not an exhaustive list of all the sustainability related courses at Penn, but covers the majority across a range of Departments and Schools. Please advise Penn Sustainability about any missing courses, updates, or revisions ([sustainability@upenn.edu](mailto:sustainability@upenn.edu)).

The inventory was first compiled in 2012. It was updated in August 2015 and 2017 by searching "sustain", "green", "preservation", "conservation", "urban", "energy", "transportation" and "waste" in the PennInTouch Course Search, and finding relevant classes. The 2019 update relied on outreach to the academic coordinators in all 12 schools in order to verify listed courses.

Classes listed as 500 or higher are graduate level classes, and if they are open to undergraduate students may require special permission from the instructor.

The Sustainability Course Inventory was prepared by the Penn Sustainability Office. Please direct any comments, updates, revisions, or suggestions to [sustainability@upenn.edu](mailto:sustainability@upenn.edu) with "Penn Sustainability Course Inventory" in the subject line.

Please consider the environment before choosing to print this document.

# COURSE ABBREVIATIONS

AAMW	Art & Archaeology of the Mediterranean World	DEMG	Demography
ACCT	Accounting	DTCH	Dutch
AFST	African Studies Program	DYNM	Organizational Dynamics
AFRC	Africana Studies	EESC	Earth and Environmental Science
AMCS	Applied Math & Computational Science	EALC	East Asia Languages & Civilizations
ANAT	Anatomy	ECON	Economics
ANCH	Ancient History	EDUC	Education
ANEL	Ancient Near East Languages	ESE	Electrical & Systems Engineering
ANTH	Anthropology	EAS	Engineering and Applied Science
ARAB	Arabic	ENGL	English
ARCH	Architecture	ENM	Engineering Mathematics
ARTH	Art History	ENVS	Environmental Studies
ASAM	Asian American Studies	EPID	Epidemiology
ALAN	Asian Languages	FNCE	Finance
ASTR	Astronomy & Astrophysics	FNAR	Fine Arts
BCHE	Biochemistry (Undergraduate)	FOLK	Folklore
BMB	Biochemistry and Molecular Biophysics (Graduate)	FREN	French
BE	Bioengineering	GAS	Graduate Arts & Sciences
BIOE	Bioethics (Medical Ethics)	GSWS	Gender, Sexuality & Women's Studies
BIOM	Biomedical Graduate Studies	GCB	Genomics & Computational Biology
BIBB	Biological Basis of Behavior	GRMN	Germanic Languages
BIOL	Biology	GAFL	Government Administration
BIOT	Biotechnology	GEOG	Geology
BSTA	Biostatistics	GREK	Greek
BPUB	Business & Public Policy	HEBR	Hebrew
CAMB	Cell and Molecular Biology	HSOC	Health & Sciences
CBE	Chemical & Biomolecular Engineering	HCMG	Health Care Management
CHEM	Chemistry	HIST	History
CHIN	Chinese	HPR	Health Policy Research
CINE	Cinema Studies	HSPV	Historic Preservation
CPLN	City & Regional Planning	HSSC	History & Sociology of Science
CLST	Classical Studies	IMUN	Immunology
COGS	Cognitive Science	INSR	Insurance & Risk Management
COLL	College	IPD	Integrated Product Design
COMM	Communications	INTR	International Relations
COML	Comparative Literature & Literary Theory	ITAL	Italian
CIS	Computer & Information Science	JPAN	Japanese
CIT	Computer & Information Technology	JWST	Jewish Studies
CRIM	Criminology	KORN	Korean
		LARP	Landscape Architecture and Regional Planning
		LATN	Latin

# COURSE ABBREVIATIONS

LALS	Latin American & Latino Studies	SOCI	Sociology
LAW	Law	SAST	South Asia Studies
LGST	Legal Studies & Business Ethics	SPAN	Spanish
LING	Linguistics	STAT	Statistics
LGIC	Logic, Information and Computation	TCOM	Telecommunications
MGMT	Management	THAR	Theater Arts
MKTG	Marketing	TURK	Turkish
MKSE	Market & Social Systems	URBS	Urban Studies
MSSP	Master in Social Policy	VLST	Visual Studies
MSE	Materials Science & Engineering	YDSH	Yiddish
MATH	Mathematics		
MEAM	Mechanical Engineering & Applied Mechanics		
MSCI	Military Science		
MUSA	Urban Spatial Analytics		
MUSC	Music		
NANO	Nanotechnology		
NELC	Near Eastern Languages & Civilizations		
NGG	Institute of Neurological Science		
NPLD	Nonprofit/NGO Leadership		
NSCI	Naval Science		
NURS	Nursing		
OPIM	Operations & Information Management		
PERS	Persian		
PHRM	Pharmacology		
PHIL	Philosophy		
PPE	Philosophy, Politics, and Economics		
PHYS	Physics		
PRTG	Portuguese		
PSCI	Political Science		
PSYC	Psychology		
PUBH	Public Health Studies		
REAL	Real Estate		
RELS	Religious Studies		
ROML	Romance Languages		
RUSS	Russian		
SCND	Scandinavian Languages		
STSC	Science Technology & Society		
SLAV	Slavic Languages including other Eastern European Languages		
SWRK	Social Policy and Practice		

# INTEGRATING SUSTAINABILITY ACROSS THE CURRICULUM

Integrating Sustainability Across the Curriculum (ISAC) Program was established in 2012 to help Penn faculty introduce environmental sustainability into existing and new courses. Faculty participants explore sustainability concepts at a one-day workshop in the late spring, and then are partnered with an undergraduate student research assistant to work over the summer integrating sustainability into the course syllabi, lectures, assignments, reading material, and tests. More information about ISAC can be found here: <http://www.upenn.edu/sustainability/get-involved/integrating-sustainability-across-curriculum>

Below are the courses that have participated in ISAC:

Course Number	Course Title	Professor/Instructor
ANTH 415	Archeology of Animals	Moore
ANTH 440	Plans and Society	White
ARCH 111	Architecture in the Anthropocene	Barber
ARCH 413 / 531	Construction Technology I	Trubiano
BIOL 376 / 576	Microbial Diversity and Pathogenesis Lab	Hogan
CHEM 012	Environmental Chemistry	Lester
CHEM 101	Introduction to Chemistry	Dmochowski
CHEM 251	Principles of Biochemistry	Saven
COMM 123	Critical Approaches to Popular Culture	Paxton
DYNM 555	Leadership and Sustainability: How to Engage in Collaborative Innovation	Garofalo / Nuessle
DYNM 615	Global Pennovation	Finn
EAS 301 / 505	Climate Policy and Technology	Huemmler
EAS 503 - 401	Energy Systems and Policy	Huemmler
ECON 001	Introduction to Microeconomics	Stein
EDUC	Educating for Sustainability	MacKenzie
EESC 327	Principles of Sustainability	Plante
ENVS 100	Introduction to Environmental Science	Plante

# INTEGRATING SUSTAINABILITY ACROSS THE CURRICULUM

Course Number	Course Title	Professor/Instructor
ENVS 325	Sustainable Goods	Hagan
ENVS 400	Landscape Sustainability	Jerolmack
GRMN	Utopian Visions	Wiggin
HSPV 572	Preservation Through Public Policy	Hollenberg
LALS 233/ HIST 233	From Coca to Cocaine	Farnsworth
LGST 215 / 815	Environmental Management, Law and	Light
LGST 612	Policy Responsibility in Professional	Light / Orts
STSC 272	Services Energy in American History	Greene
URBS 225 / ARCH 255 / ENVS 255	Sustainability in Action	Hughes / Billhymer
URBS 290	Metropolitan Nature: Urban Sustainability	Nairn
URBS 417	Cities and Sustainability	Ben-Amos

# SCHOOL OF ARTS AND SCIENCES

Course Number	Course Title	Professor/Instructor
ANTH 108 <i>NELC 103</i> <i>URBS 121</i>	Pastoral Nomadism	Zettler
ANTH 110 <i>NELC 111</i>	Water in the Middle East Throughout History	Hammer
ANTH 134 <i>ARTH 127</i> <i>CLST 127</i> <i>HIST 127</i> <i>NECL 187</i>	Making the Natural World: An Introduction to Political Ecology	Lycett
ANTH 317 <i>LALS 317</i>	The Politics of Matter and the Matter of Politics	Lyons
ANTH 331	Historical Ecology	Staff
ANTH 361 <i>ANTH 661</i> <i>VCSN 657</i>	Global Food Security	Spooner
ANTH 367	Living World in Archaeological Science	Staff
ANTH 421	Anthropology In and Of Environmental Health	Barg
ANTH 508 <i>HSPV 747</i>	Conversation of Archaeological Sites and Lands: Impossible Ruins	Erickson/Matero
ANTH 541	Critical Engagements with Sciences and Justices	Powell
BIOL 010	Ecological Consequences of Climate Change	Dunham
BIOL 017	The Biology of Food	Poethig
BIOL 019	Biology and Public Policy	Hewitt
BIOL 138	Energy Transformation and Living Off-The-Grid	Rome
BIOL 140 <i>BIOL 440</i>	Humans and the Environment	Janzen
BIOL 240	Ecology: Individuals to Ecosystems	Helliker/Akcay
BIOL 325	Marine Biology	Petratis
BIOL 376 <i>BIOL 576</i>	Microbial Diversity and Pathogenesis	Mechthild/Pohlschroder
BIOL 400	Field Botany	Skema/Block
BIOL 411	Evolutionary Ecology	Linksvayer
BIOL 414	Advanced Ecology	Casper
BIOL 415 <i>ENVS 416</i> <i>ENVS 640</i>	Freshwater Ecology	Arcscott
BIOL 440 <i>BIOL 140</i>	Advanced Analysis of Humans and the Environment	Staff
<i>BIOL 464</i>	Field Course on Aquatic Microbial Ecology	Lester



# SCHOOL OF ARTS AND SCIENCES

Course Number	Course Title	Professor/Instructor
CHEM 012 CHEM 251	Environmental Chemistry Principles of Biochemistry	Lester Staff
CLST 127 <i>ANTH 127</i> <i>ARTH 127</i> <i>HIST 127</i> <i>NELC 187</i>	The Material Past in a Digital World	Cobb
COML 151 <i>CIMS 150</i> <i>ENVS 150</i> <i>GRMN 150</i>	Water Worlds	Richter
COML 544 <i>GRMN 643</i> <i>ENGL 643</i> <i>ENVS 543</i> <i>SPAN 543</i>	Environmental Humanities: Theory, Method, Practice	Staff
COMM 123 COMM 243	Critical Approaches to Popular Culture Ethnography and Media for Social Justice	Lingel Lingel
ECON 001 ECON 237	Introduction to Microeconomics Urban Fiscal Policy	Stein Sieg
ENG 548 <i>FOLK 575</i> <i>HSSC 575</i>	Environmental Imaginaries	Hufford
ENVS 098  ENVS 150 <i>CIMS 150</i> <i>COML 151</i> <i>GRMN 150</i> ENVS 181-950 <i>GRMN 181</i>	The Next Millennium: Would Technology Help Us Resolve the Environmental Dilemma Water Worlds	Bokreta/Santiago-Alives
ENVS 200 ENVS 204 <i>COML 209-401</i> <i>GRMN 230-401</i> <i>ENGL 275-401</i>	Comparative Cultures of Sustainability Introduction to Environmental Earth Science Global Climate Change	Richter  Plante Horton / Marinov
ENVS 246 <i>ENGL 246</i> <i>RELS 246</i>	Spirituality in the Age of Global Warming: How Can Science & the Humanities Work Together?	Powell

# SCHOOL OF ARTS AND SCIENCES

ENVS 279 <i>HIST 320</i> <i>HSOC 279</i> <i>STSC 279</i>	Nature's Nation: Americans and Their Environment	Greene
ENVS 301 ENVS 312 <i>ENVS 640</i> <i>PHYS 314</i>	Environmental Case Studies Ocean-Atmosphere Dynamics and Implications for Future Climate Change	Greene Marinov
ENVS 325 ENVS 326 ENVS 327 ENVS 400 ENVS 404 ENVS 408 ENVS 410 ENVS 411 ENVS 416 <i>BIOL 415</i>	Sustainable Goods GIS Mapping Place and Analyzing Spaces Principle Sustainability Environmental Studies Seminar Urban Environments: Speaking About Lead in West Philadelphia Urban Environments: The Urban Asthma Epidemic The Role of Water in Urban Sustainability and Resiliency Air Pollution: Sources & Effects in Urban Environments Freshwater Ecology	Hagan Heinlen Plante Staff Pepino Pepino Neukrug Howarth/Andrews Arcscott
ENVS 498 ENVS 507 ENVS 541 ENVS 601 ENVS 604 ENVS 616 ENVS 617 ENVS 620 ENVS 622 ENVS 629 ENVS 643	Senior Thesis Wetlands Modeling Geographic Objects Proseminar: Contemporary Issues in Environmental Studies Conservation and Land Management Risk Assessment: Science & Policy Challenges Sustainable Estuaries: An Investigation of Resources & Recovery Developing Environmental Policy Environmental Enforcement The U.S. Water Industry in the 21st Century From Brownfield Remediation to Land Revitalization: US Strategies for Reducing Soil Contamination	Dmochowski Willig Tomlin Bordeaux Harper Pepino Pepino Kulik Lisa Neukrug Keene
ENVS 669 ENVS 673 ENVS 674	Corporate Sustainability Strategies The Future of Water Life Cycle Assessments	Survis Staff Hagan / English
GSWS 007 <i>SOCI 007</i> GSWS 122-401 <i>SOCI 122</i>	Population and Society Sociology of Gender	Flippen/Harknett/ Kohler/Zuberi
GEOL 100 GEOL 103 GEOL 109 GEOL 130 GEOL 201 <i>GEOL 531</i> GEOL 318 GEOL 418	Introduction to Geology Natural Disturbances and Human Disasters Introduction to Geotechnical Science Oceanography Mineralogy Glaciers, Ice and Climate Geochemistry	Omar Phipps Omar Dmochowski Omar Goldsby Omar

# SCHOOL OF ARTS AND SCIENCES

GEOL 421 <i>GEOL 541</i>	Biogeochemistry	Plante
GEOL 508	The Geology and Geography of Energy Resources	Phipps
GEOL 509	Introduction to Remote Sensing	Dmochowski
GEOL 515	Evolution/Revolution of Land Ecosystems	Mimichele /Wing
GEOL 531	Advanced Mineralogy	Omar
GEOL 541 <i>GEOL 421</i>	Advanced Biogeochemistry	Plante
GEOL 650	Environmental Due Diligence	Cron
GEOL 656	Fate and Transport Pollutants	Mastropaolo
GEOL 667	Landfill Design	Calabria
GEOL 750	Topics in Earth Science	Sallan
GRMN 150-401 <i>CIMS 150</i> <i>COML 151</i> <i>ENVS 150</i>	Water Worlds	Richter
GRMN 181-950 <i>ENVS 181</i>	Comparative Cultures of Sustainability	Richter
GRMN 239-401 <i>COML 209</i> <i>ENGL 275</i> <i>ENVS 239</i>	Sustainability and Utopia	Wiggin
GRMN 543-401 <i>COML 544</i> <i>ENGL 643</i> <i>ENVS 543</i> <i>SPAN 543</i>	Public Environmental Humanities	Wiggin
GRMN 544-501 <i>ANTH 543</i> <i>COML 562</i> <i>URBS 544</i>	Environmental Humanities: Theory, Method, and Practice	Wiggin
STSC 168 STSC 179 <i>HSOC 179</i>	Environment and Society Environmental History	Benson Greene
HSOC 003 <i>SOCI 033</i> <i>STSC 003</i>	Technology and Society	Benson
HSOC 135 <i>PSCI 135</i>	The Politics of Food	Mary E. Summers
HSOC 179 <i>STSC 179</i>	Environmental History	Greene

# SCHOOL OF ARTS AND SCIENCES

Course Number	Course Title	Professor/Instructor
HIST 107-301 and 107-302	Comparative Capitalist Systems	Drew
HIST 127 <i>ANTH 127</i> <i>CLST 127</i> <i>ARTH 127</i> <i>NELC 187</i>	The Material Past in a Digital World	Cobb
HIST 209 <i>LALS 233</i>	Industrial Metropolis	Vitiello
NELC 103 <i>ANTH 121</i> <i>URBS 121</i>	Origin and Cultures of Cities	Zettler
DYNAM 555	Leadership and Sustainability: How to Engage in Collaborative Innovation	Steinberg
DYNAM 615	Global PENNovation: Water Security in a Changing World	Finn
DYNAM 662-001	Entrepreneurship and Leadership: Creating Winners	Keech
DYNAM 663	Green Skepticism: Communicating and Implementing Sustainable Business	Heller
DYNAM 758 <i>900</i> <i>201</i> <i>902</i>		
DYNAM 759	Sweden: Sustainable Development and the Natural Step	Barstow
DYNAM 781	Dynamic Hub of the Americas: Entrepreneurship and Sustainable Development in Panama	Barstow & Cronin
PHIL 079	Environmental Ethics	Staff
PHYS 016	Energy, Oil, and Global Warming	Sweeney
PSCI 135 <i>HSOC 135</i>	The Politics of Food and Agriculture	Summers
PSCI 136	Urban Politics in the US	Reed
SOCI 011	Urban Sociology	Staff
SOCI 041	Environment and Society	Staff
SOCI 111 <i>HSOC 111</i>	Health of Populations	Kohler
SOCI 231	Global Health	Staff
SOCI 420 <i>URBS 457</i> <i>HIST 440</i>	Perspectives on Urban Poverty	Fairbanks
SOCI 435 <i>URBS 457</i>	Globalization and the City: Global Urbanization	Barragan
SOCI 453	Metropolitan Growth and Poverty	Madden

# SCHOOL OF ARTS AND SCIENCES

Course Number	Course Title	Professor/Instructor
URBS 010 <i>AFRC 041</i> <i>SOCI 013</i>	Homelessness and Urban Inequality	Culhane
URBS 103 <i>HIST 209</i>	Industrial Metropolis	Vitiello
URBS 121 <i>ANTH 121</i> <i>NELC 103</i>	Origin and Culture of Cities	Zettler
URBS 178 <i>AFRC 078</i> <i>HIST 173</i>	Urban University-Community Relations: Faculty-Student Collaborative Action in Urban University-Community Relations	Harkavy
URBS 270 <i>LALS 273</i> <i>SOCI 270</i>	The Immigrant City	Vitiello
URBS 290 URBS 294 <i>ANTH 294</i>	Metropolitan Nature: Urban Sustainability Global Cities: Urbanization in the Global South	Narin Anand
URBS 417 URBS 419 URBS 420 <i>HIST 440</i> <i>SOCI 420</i>	Cities and Sustainability Urban Transportation in Flux Perspectives on Urban Poverty	Ben-Amos Ben-Amos Fairbanks
URBS 440 CPLN 500	Introduction to City and Regional Planning: Past and Present	Ammon
URBS 450 URBS 451 <i>CPLN 625</i> <i>GAFL 569</i>	Urban Redevelopment The Politics of Housing and Urban Development	Rachlin Kromer
URBS 452 URBS 453 <i>SOCI 435</i>	Community Economic Development Metropolitan Growth and Poverty	Lamas Madden
URBS 457 <i>SOCI 435</i>	Globalization and the City: Global Urbanization	Barragan
VIPR 120 VIPR 121	Vagelos Integrated Program in Energy Research, Seminar I Vagelos Integrated Program in Energy Research, Seminar II	Vohs/Rappe/Hughes Vohs/Rappe/Hughes

# SCHOOL OF DESIGN

Course Number	Course Title	Professor/Instructor
ARCH 111	Architecture in the Anthropocene	Barber
ARCH 431	Construction I	Staff
<i>ARCH 521</i>		
ARCH 531	Construction Technology I	Staff
<i>ARCH 431</i>		
ARCH 534	Environmental Systems II	Braham
ARCH 671-001	Professional Practice I	Staff
ARCH 708	Bioclimatic Design Studio	Staff
ARCH 732-001	Technology Designated Elective: Daylighting	Zofchak
ARCH 732-002	Technology Designated Elective: Material and Structural Intelligence	Nicol
ARCH 734	Ecological Architecture - Contemporary Practices	Martin
ARCH 751	Ecology, Technology, and Design	Braham
ARCH 752	Environmental Building Design	Staff
ARCH 753	Building Performance Simulation	Staff
ARCH 754	Performance Design Workshop	Staff
CPLN 530	Introduction to Land Use Planning	Daniels
CPLN 531	Introduction to Environmental Planning and Policy	Daniels
CPLN 535	Topics in Energy Policy	Staff
CPLN 540	Introduction to Property Development	Landis
CPLN 550	Introduction to Transportation Planning	Guerra
CPLN 571	Sensing the City	Lassiter
CPLN 590	Spatial Analysis for Urban and Environmental Planning	Steif
<i>MUSA 507</i>		
CPLN 620	Techniques of Urban Economic Development	Staff
CPLN 621	Metropolitan Food Systems	Vitiello
CPLN 622	Community Development and Public Health	Hillier
<i>PUBH 515</i>		
CPLN 624	Race, Poverty, and Place	Rodriguez
CPLN 625	The Politics of Housing and Urban Development	Kromer
<i>GAFL 569</i>		
<i>URBS451</i>		
CPLN 631	Planning for Land Conservation	Daniels
CPLN 633	Ecological Principles for Planners	Hewitt
CPLN 635	Water Policy	Lassiter
CPLN 641	Progressive Development	Staff
CPLN 675	Land Use and Environmental Modeling	Staff
CPLN 677	Land Conservation Finance	Staff
CPLN 687	Elements of a Sustainable Development Policy	Keene
CPLN 685	Environmental Readings	Steiner
CPLN 730	Sustainable Cities	Hughes
ENMG 502	Introduction to Energy Policy	Hughes
ENMG 507	Ideas in Energy Policy	Hughes

# SCHOOL OF DESIGN

Course Number	Course Title	Professor/Instructor
FNAR 313 <i>FNAR 613</i>	The Chinese Body and Spatial Consumption in Chinatown	Lum
HSPV 538	Cultural Landscapes and Landscape Preservation	Mason
HSPV 540	Historic Building Technology	Staff
HSPV 572	Preservation through Public Policy	Staff
HSPV 621	Social Justice Seminar	Hawkes
HSPV 640	Contemporary Design in Historic Settings	Mason
HSPV 660	Theories in Historic Preservation I	Mason
HSPV 701	Historic Preservation Studio	Meighan / Myers
HSPV 740	Conservation: Finishes/Metals	Matero
HSPV 747	Conservation of Archeological Sites and Landscapes	
LARP 501 <i>LARP 502</i> <i>LARP 601</i> <i>LARP 602</i> <i>LARP 701</i> <i>LARP 702</i>	Studio I-VI	Staff
LARP 511 <i>LARP 512</i> <i>LARP 611</i> <i>LARP 612</i>	Workshop: Ecology and Built Landscapes	Willig and Popowsky
LARP 535	Theory I: The Culture of Nature	Weller
LARP 540 <i>LARP 770</i>	Theory II: Topics in Contemporary Landscape Architecture	Gianetto
LARP 611	Workshop III: Site Engineering and Water Management	Staff
LARP 660-401	Fundamentals of Urban Design	Stephan AI
LARP 750	Topics in Construction, Horticulture, and Planning Design	Staff
LARP 755	Arboretum Management I: Understanding Plants	Skema
LARP 756	Arboretum Management II: Evaluating Public Gardens	Skema
LARP 760	Topics in Ecological Design	Staff
LARP 761	Urban Ecology	Hunt/Gianetto
LARP 770 <i>LARP 540</i>	Topics in Theory and Design: The Craft and Criticism of Landscaping	Staff
LARP 780-001	Topics in Theory and Design: The Craft and Criticism of Landscaping	Staff
LARP 780-002	Topics in Theory and Design: Design in the Terrain of Water	Staff
LARP 780-002	Topics in Theory and Design: Design with Risk	Staff
LARP 780-004	Topics in Theory and Design: China in Africa Seminar	Staff
LARP 780-401	Environmental Readings	Steiner
LARP 780-401	Topics in Theory and Design: The Culture of Nature	Weller
MUSA 507 <i>CPLN 590</i>	Spatial Analysis for Urban and Environmental Planning	Steif

# SCHOOL OF ENGINEERING & APPLIED SCIENCES

Course Number	Course Title	Professor/Instructor
CBE 230 <i>CBE 160</i>	Material and Energy Balances of Chemical Processes	Staff
CBE 350 CBE 375 CBE 430 <i>CBE 510</i> <i>MSE 430</i> <i>MSE 580</i>	Fluid Mechanics Engineering and the Environment Introduction to Polymers	Hollaran Staff Staff
CBE 543 <i>GEOL 643</i>	Sustainable Development and Water Resource Systems	Saunder
CBE 545	Electrical Energy Conversion and Storage	Vohs
ESE 521 ESE 548 <i>CPLN 650</i>	The Physics of Solid State Energy Devices Transportation Planning Methods	Kagan Ryerson
ESE 567 <i>BEPP 761</i> <i>BEPP 261</i> <i>BEPP 961</i> <i>OIDD 261</i> <i>OIDD 761</i>	Risk Analysis and Environmental Management	Kunreuther
ENGR 250 <i>MEAM 250</i>	Energy Systems, Research, and Technology	Jackson
ENGR 503 EAS 301 <i>EAS 505</i>	Engineering in Oil, Gas, and Coal, from Production to End Use Climate Policy and Technology	Staff Staff
EAS 306 <i>EAS 506</i>	Electricity and Systems Markets	Staff
EAS 401 <i>EAS 501</i>	Energy and Its Impacts: Technology, Ecology, Economics, Sustainability	Loir
EAS 402 <i>EAS 502</i>	Renewable Energy and Its Impacts: Technology, Environment, Economics, Sustainability	Loir
EAS 403 <i>EAS 503</i>	Energy Systems and Policy	Huemmler
EAS 501 <i>EAS 401</i>	Energy and Its Impact: Technology, Ecology, Economics, Sustainability	Loir
EAS 503 <i>EAS 403</i>	Renewable Energy and Its Impacts: Technology, Ecology, Economics, Sustainability	Huemmler
MSE 545 MSE 580 <i>CBE 430</i> <i>CBE 510</i> <i>MSE 430</i>	Materials for Energy and Environmental Sustainability Introduction to Polymers	Staff Staff



# SCHOOL OF ENGINEERING & APPLIED SCIENCES

Course Number	Course Title	Professor/Instructor
MEAM 502	Energy Engineering in Power Plants and Transportation Systems	Staff
MEAM 503	Direct Energy Conversion: From Macro to Nano	Staff
MEAM 504	Enhancing Sustainability Through Tribology	Jackson
MEAM 570	Transport Processes I	Ayyaswamy

# SCHOOL OF EDUCATION

Course Number	Course Title	Professor/Instructor
EDUC 503 <i>ANTH 546</i> <i>URBS 546</i>	Global Citizenship	Hall
EDUC 570	Education and the American Metropolis	Puckett

# LAW SCHOOL

Course Number	Course Title	Professor/Instructor
LAW 634	Environmental Law	Orts
LAW 695	Land Use Law	Witt
LAW 777	Environmental Lawyering	Fox
LAW 790	International Environmental Law	Chang
LAW 871	Externship: Delaware River Keeper	Staff
LAW 919	Energy Law and Climate Change	Comer/Kulak
LAW 974	Defining and Achieving Regulatory Excellence	Coglianesse

# PERLMAN SCHOOL OF MEDICINE

Course Number	Course Title	Professor/Instructor
PUBH 500 <i>NURS 570</i>	Foundations of Public Health	Hao La
PUBH 503	Environmental and Occupational Health	Emmett
PUBH 514	Experiential Learning in Environmental and Occupational Health	Staff
PUBH 517 <i>EPID 518</i>	Geography and Health	Staff
PUBH 523	Epidemics: Social Causes and Consequences of Outbreaks, Emergencies and Threats	Staff
PUBH 578	Housing Quality, Equity and Public Health	Staff

# SCHOOL OF NURSING

Course Number	Course Title	Professor/Instructor
NURS 570 <i>PUBH 500</i>	Introduction to Public Health	Buttenheim / Nguyen
NURS 575	Health, Sustainability, and the Built Environment	Lee
NURS 698-900	Practicum: Quality Improvement in Healthcare	Piper/Keim

# SCHOOL OF SOCIAL POLICY & PRACTICE

Course Number	Course Title	Professor/Instructor
NPLD 787	Leadership: Group Dynamics and Organizational Politics	Smith
NPLD 791	Leadership: Designing the Future	Smith
SWRK 736	Building Community Capacity	Staff
SWRK 755 <i>MSSP 755</i>	International Social Work: Perspective from the Global South	Shown

# SCHOOL OF VETERINARY MEDICINE

Course Number	Course Title	Professor/Instructor
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*The Penn School of Veterinary Medicine offers classes related to sustainability, including animal health economics, epidemiology, public health and food production systems. These classes are only open to students currently enrolled at Penn as candidates for the Doctor of Veterinary Medicine (VDM) degree.*

Animal Production Systems  
Catastrophic Epidemic Infectious Diseases in Animals  
Exotoxicology for Veterinarians  
Emerging and Exotic Diseases  
Introduction to Poultry, Swine, and Dairy Medicine  
Veterinary Medicine Global Health and Food Security

# WHARTON SCHOOL OF BUSINESS

Course Number	Course Title	Professor/Instructor
BEPP 230 <i>FNCE 230</i> <i>REAL 230</i>	Urban Fiscal Policy	Ferreira
BEPP 263 BEPP 761 <i>BEPP 261</i> <i>BEPP 961</i> <i>ESE 567</i> <i>OIDD 261</i> <i>OIDD 761</i>	Environmental & Energy Economics and Policy Risk Analysis and Environmental Management	Van Benthem Kunreuther
BEPP 763 <i>OIDD 763</i>	Energy Markets & Policy	Van Benthem
BPUB 206 <i>BPUB 706</i> <i>REAL 206</i> <i>REAL 772</i> <i>REAL 972</i>	Urban Public Policy and Private Economic Development	Pack
BPUB 261 <i>BEPP 761</i> <i>BPUB 761</i> <i>BPUB 961</i> <i>ESE 567</i> <i>OPIM 261</i> <i>OPIM 761</i>	Risk Analysis and Environmental Management	Kunreuther
FNCE 230 <i>BEPP 230</i> <i>REAL 230</i>	Urban Fiscal Policy	Inman
FNCE 256	Finance Energy	Gilje
LGST 215 <i>LGST 815</i> <i>MGMT 213</i> <i>MGMT 713</i>	Environmental Management: Law and Policy	Light/Orts
LGST 220 <i>LGST 820</i>	International Business Ethics	Berkey/Laufer
LGST 612	Responsibility in Business	Staff
MGMT 209 MGMT 213 <i>MGMT 713</i> <i>LGST 215</i> <i>LGST 815</i>	The Political Environment of Multinational Firm Environmental Management: Law and Policy	Staff Orts/Light
MGMT 240 MGMT 715 MGMT 720 MGMT 740	Group Dynamics The Political Environment of the Multinational Firms Corporate Diplomacy Leading Effective Teams	Friedman Gatignon Henisz Friedman

# WHARTON SCHOOL OF BUSINESS

Course Number	Course Title	Professor/Instructor
OIDD 615-003 004, 008	Operations Strategy	Cachon / Veeraraghavan / Song / Fisher
OIDD 673	Global Supply Chain Management	
OPIM 261 <i>OPIM 761</i> <i>ESE 567</i> <i>BEPP 761</i> <i>BPUB 261</i> <i>BPUB 761</i> <i>BPUB 961</i>	Risk Analysis and Environmental Management	Kunreuther
OPIM 762 OPIM 762	Environmental Sustainability and Value Creation Energy Markets and Policy	Staff Van Benthem
REAL 230 <i>BEPP 230</i> <i>FNCE 230</i>	Urban Fiscal Policy	Ferreira
REAL 946	Advanced Topics in Urban Economics	Ferreira/Duranton

# BIANNUAL COURSES

Course Number	Course Title	Professor/Instructor
AFS 620	Topics on African Environmental Issues	Staff
ARTH 127	The Material Past in a Digital World	Cobb
BIOL 414	Advanced Ecology	Petritis/Casper
COML 209-401 <i>GRMN 239</i> <i>ENVS 239</i> <i>ENGL 275</i>	Sustainability and Utopia	Wiggin
COML 776 <i>LARP 770</i> <i>ITAL 371</i> <i>LARP 370</i>	Topics in Landscape Architecture History and Theory	Hunt/ Gianetto
EESC 095 EESC 327	Risk Communication and the Environment Principles of Sustainability	Osterhoudt Plante
ENG 206-302 ENG 275-401 <i>ENVS 239-401</i> <i>COML 209-401</i> <i>GRMN 239-401</i>	Poetry and the Environment Sustainability and Utopia	
ENG 282 <i>RELS 246</i> <i>ENVS 246</i>	Spirituality in the Age of Global Warming	Powell
ENVS 179 <i>GRMN 181-950</i>	Environmental Hisotry	Greene
ENVS 239-401 <i>ENGL 246</i> <i>RELS 246</i>	Sustainability and Utopia	Wiggin
ENVS 272 ENVS 305 ENVS 494 ENVS 543 ENVS 609-660 ENVS 611 <i>ENVS 412</i>	Energy in American History Bioremediation Toward Environmental Sustainability on Penn's Campus Environmental Humanities Creating Gateways to the Land with Smarter Conservation Environtmental Law	Greene Vann Garofalo Wiggin Kiziuk Keene
ENVS 612 ENVS 615	Economics and the Environment Professional Case Studies in Environmental Analysis and Management	Kiziuk Laskowski
ENVS 623	Crossing Borders: Policy, Regulatory and Management Issues in Transboundary Environmental Protection	Feldman
ENVS 624-660	US Environmental Policy - An Analysis of NEPA	Forren

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Course Number	Course Title	Professor/Instructor
ENVS 625	Overview of Environmental Justice: Issues, Actions and Visions for the Future	Harris/ Thompson
ENVS 627	The Delaware River: An Environmental Case Study	Collier
ENVS 631	Current EPA Regulatory Practices and Future Directions	Laskowski
ENVS 634	Closing the Loop on Climate Change	Chu
ENVS 635	Major Global Environmental Problems of Today and How we Must Deal with Them Tomorrow	Laskowski
<i>ENVS 437</i>		
ENVS 637	Global Water Issues	Laskowski
ENVS 638	Global Water Policy and Governance	Laskowski
ENVS 639	Policy to Practical in Environmental Management: Water Issues	Laskowski
ENVS 645	Energy Geopolitics of Eurasia	Mikulska
ENVS 647	Urban Ecology	Bathala
ENVS 648-660	Food and Agricultural Policy	Kulik
ENVS 652	God, Gold & Green: Themes and Classics in Environmental Thought	Blaine
ENVS 656	Environmental Futures	Laskowski
ENVS 657	Hazardous Waste Health Effects	Staff
ENVS 662	Green Design and the City	Berman
ENVS 664	Sustainable Design	Berman
ENVS 667-401	Sustainable Goods	Hagan
ENVS 667-660	Introduction to Sustainability	Hagan
ENVS 671	Sustainable Development Strategies	Keene
ENVS 676-660	Corporate Sustainability Management & Communications	Hagan/English
ENVS 613	Business and the Natural Environment	Heller
FOLK 575	Environmental Imaginaries	Hufford
<i>ENGL 584</i>		
<i>HSSC 575</i>		
GEOL 096	Field Approaches to Understanding the Earth & Environmental Science	Staff
GEOL 201	Global Climate Change	Marinov
GEOL 205	Paleontology	Sallan
GEOL 206	Stratigraphy	Jerolmack
GEOL 305	Earth Surface Processes	Jerolmack
GEOL 405	Advanced Paleontology	Sallan
GEOL 409	Introduction to Remote Sensing	Dmochowski
GEOL 419	Coasts	Horton
GEOL 478	Evolution of the Dinosaurs	Dodson
GEOL 500	Advanced Earth Systems	Phipps
GEOL 503	Earth Systems and Earth Hazards	Phipps
GEOL 542	Data Analysis in Earth Science	Jerolmack
GEOL 545	Earth Surface Processes	Jerolmack
GEOL 631	Reconstructing Former Sea Levels	Horton
GEOL 636	Quantitative Paleoclimatology	Staff

# BIANNUAL COURSES

Course Number	Course Title	Professor/Instructor
GEOL 637	Recent Climate Change	Staff
GEOL 640	Environmental Investigations and Reporting	Sauder/Mastropaolo
GEOL 651	Geocomputations	Mastropaolo
GEOL 652	Physical Geology for Environmental Professionals	Doheny
GEOL 653	Introduction to Hydrology	Sauder
GEOL 654	Geomechanics: Solids	Duda
GEOL 655	Engineering Geology	Calabria
GEOL 670	Engineering Geology: Rock Mechanics	Freed
GEOL 696	Advanced Geologic Field Methods	Cron
HSSC 271 <i>ENVS 272</i> <i>STSC 272</i>	Law, Environment and Technology	Staff
HSSC 272 <i>FOLK 575</i> <i>ENGL 584</i>	Energy in American History	Staff
HSSC 575	Environmental Imaginaries	Staff
STSC 272 <i>HSOC 312</i>	Energy in American History	Staff
STSC 312	Weapons of Mass Destruction	Lindee
HSOC 131-910 <i>PSCI 135</i>	Sustainability and Public Health	Mackenzie
HSOC 312 <i>ENVS 404</i> <i>STSC 312</i>	Weapons of Mass Destruction	Lindee
HSOC 404 <i>ENVS 408</i>	Urban Environments: Speaking About Lead in West Philadelphia	Pepino
HSOC 408	Urban Environments: The Urban Asthma Epidemic	Pepino
HIST 173 <i>URBS 103</i>	Urban University-Community Relations: Faculty-Student Collaborative Action in Urban University-Community Relations	Harkavy
HIST 233 <i>HSOC 179</i> <i>ENVS 179</i> <i>STSC 179</i>	Environmental History	Farnsworth
HIST 320 <i>SOCI 420</i> <i>URBS 420</i>	Environmental History	Environmental History
HIST 440 <i>ANTH 121</i> <i>URBS 121</i>	Perspectives on Urban Poverty	Fairbanks
ITAL 371	Topics in Landscape Architecture History and Theory	



# BIANNUAL COURSES

Course Number	Course Title	Professor/Instructor
ITAL 371 <i>LARP 770</i> <i>COML 776</i> <i>LARP 370</i>	Topics in Landscape Architecture History and Theory	Hunt/Gianetto
LALS 133 <i>ANTH 133</i>	Native Peoples and the Environment	Erickson
LALS 233 <i>HIST 233</i>	From Coca to Cocaine	Farnsworth
NELC 187	The Material Past in a Digital World	Cobb
PSCI 154 PSCI 398-302 PSCI 398-303 <i>URBS 265</i> <i>GSWS 007</i>	Politics of Global Environment PIW: The US Presidency: Limits on the Chief Executive Power PIW: Today's Diplomacy: How Does it Really Work?	Staff Rodriguez Denburg
RELS 246 <i>ENG 282</i> <i>ENVS 246</i>	Spirituality in the Age of Global Warming: Designing a Digital Mapping Project in Scalar	Powell
SOCI 007 <i>GSWS 007</i>	Population and Society	Flippen/Kohler/Zuberi
SOCI 041 <i>HIST 440</i> <i>URBS 420</i>	Homelessness and Urban Inequality	Culhane
URBS 225 <i>GSWS 007</i> <i>SOCI 007</i>	Sustainability in Action	Hughes/Billhymer
URBS 265 <i>CPLN 676</i>	Population and Society	Staff
URBS 390 URBS 463	Urban Agriculture Brownfield Remediation: The Historical, Scientific, and Policy Dimensions of Brownfields in Old Industrial Cities	Narin Kenne
WRIT 076	Urban Planning Utopias / Green Cities	Staff
ARCH 225 <i>URBS 225</i> <i>ENVS 225</i>	Sustainability in Action	Hughes / Billhymer
ARCH 433-401 ARCH 756	Environmental Systems I Sustainable Urban Forms	Mostapha/Sadghipour Staff

# BIANNUAL COURSES

Course Number	Course Title	Professor/Instructor
HSPV 556 HSPV 793	Documentation and Conservation of the Historic Landscape Conservation: Masonry/Wood	Staff Staff
ESE 360 <i>CBE 375</i>	Engineering and the Environment	Staff
ESE 418 ESE 560 <i>CBE 543</i>	Electrical Energy Storage Systems Sustainable Development/Water Resource Systems	Santiago Saunders
MSE 430 <i>CBE 430</i> <i>MSE 580</i>	Energy Systems and Policy	Shu Yang
MEAM 504	Enhancing Sustainability Through Tribology	Staff
EDUC 605 EDUC 646	Sustainability in Schools Participatory Educational Research in Global Perspective: Theory and Practice	Ball Ravitch
NURS 667 <i>PUBH 530</i>	Environmental Toxicology: Risk Assessment and Health Effects	Staff
COMM 385	Media Activism and Social Change	Garry
FNCE 882	ASP - Energy Finance	Staff
MKTG 233	The Social Impact of Marketing	Hutchinson
REAL 206	Urban Public Policy and Private Economic Development	Pack
WH 219	Sustainable Growth	Asean
PUBH 530 <i>NURS 667</i>	Environmental Toxicology: Risk Assessment and Health Effects	Staff