PROFESSIONAL STUDIES URBAN SUSTAINABILITY (PSUS)

Explanation of Course Numbers
- Courses in the 1000s are primarily introductory undergraduate courses
- Those in the 2000–4000s are upper-division undergraduate courses that can also be taken for graduate credit with permission and additional work
- Those in the 6000s and 8000s are for master’s, doctoral, and professional-level students
- The 6000s are open to advanced undergraduate students with approval of the instructor and the dean or advising office

PSUS 6201. Principles of Sustainable Urban and Regional Planning. 3 Credits.
The environmental, social, and economic elements of sustainability. Present and future challenges, including environmental management, energy policy, financial crises, global warming, inequality, public education, third and first world slums, the success and failure of nations, urban agriculture, urban economics, and more. The implications of sustainable development and conducting research based on evidenced-based policy. Students focus on the work of researchers outside of the planning field as they write a series of research essays containing reviews of relevant scientific literature.

PSUS 6202. Urban and Environmental Economics. 3 Credits.
The application of neoclassical economics to problems faced by practitioners of the field of sustainable urban and regional planning. Key economic concepts including supply and demand, consumption and production, markets and market failure, and measurement of environmental and other non-market commodities. An economist’s perspective on the principals and methods for understanding urban and environmental challenges and solutions, urban growth, environmental quality, public policy, and other issues fundamental to contemporary development.

PSUS 6203. Research Methods I: Geospatial and Econometric Analysis. 3 Credits.
Focus on developing proficiency in geographic information systems (GIS) and econometric analysis, a method of statistical analysis for measuring the relationships at work in socioeconomic phenomena. Building and analyzing spatial datasets, specifically using ArcGIS and Stata statistical software.

PSUS 6204. Land Use Law. 3 Credits.
PSUS 6210. Transportation Planning in City Systems. 3 Credits.
Transportation planning with long-run goals in mind, including reducing greenhouse gas emissions. The role of planning at local and regional scales within the broader framework of transportation engineering.

PSUS 6211. Regional Development and Agricultural Economics. 3 Credits.
The economics of land use patterns and development processes in the United States and elsewhere in the world. Introduction to the field of agricultural economics and examination of food deserts and other food-related problems relevant to the field of sustainable urban planning.

PSUS 6212. Sustainable Communities I: Housing and Design. 3 Credits.
Community development with a focus on policy and the various sectors of interest that affect contemporary urbanization. How policies, planning techniques, and implementation strategies form the core work of planning practitioners. Topics include water supply, food deserts, public health, and urban resilience. Pathways to more sustainable communities are explored through the policy arenas in which key decisions are made; key sectors that make up the fabric of communities; and special topics that have emerged as critical challenges for sustainable community development.

PSUS 6213. Research Methods II: Advanced Geospatial and Econometric Analysis. 3 Credits.
Builds upon skills developed in PSUS 6203. Application of econometric and geospatial analysis in the field of sustainable urban and regional planning. Emphasis on objectivity and use of the scientific method to form defensible, evidence-based policy. Prerequisites: Research Methods I.

PSUS 6220. Planning Resilient and Low-Carbon Cities. 3 Credits.
International perspectives on urban planning, taking into consideration increased global temperatures resulting from greenhouse gas emissions-induced climate change. The course is taught with reference to the findings of the Intergovernmental Panel on Climate Change (IPCC) and considers how urbanization around the world must adapt to the reality of global warming and its consequences.

PSUS 6221. The Scientific Basis of Climate Change. 3 Credits.
The science underlying climate change policy and decision making. Earth systems, climate change projections, the need for mitigation, and impact assessment. Designed for non-scientists.
PSUS 6222. Sustainable Building: Energy Demand, Efficiency, and Supply. 3 Credits.
Energy use in built environments with an emphasis on fundamental drivers of energy demand, strategies to promote energy efficiency, and essential features of energy supply. Examination of the relationship between energy demand and supply in development. How advances in construction technology can help counter greenhouse gas emissions.

PSUS 6223. Sustainable Communities II: Tools for Assessment and Transformation. 3 Credits.
Builds on PSUS 6212 by further detailing the theory and tools relevant to the assessment and transformation of neighborhood and communities. Geospatial analysis explore the fundamental drivers of urban form, advanced transportation systems, theories of change, and various impact assessment tools used to inform policy implementation.

PSUS 6224. Sustainable Energy for Cities and the Environment. 3 Credits.
Resource management and renewable energy technologies. Vulnerabilities of existing urban structures, particularly the energy grid. Implications of and solutions to energy-related problems likely to arise in present and future cities.

PSUS 6230. Sustainable Comm Design Studio. 3 Credits.
PSUS 6231. Practicum:ClimateChangeMgt&Pol. 3 Credits.

PSUS 6233. Capstone Studio. 3 Credits.

PSUS 6235. Adv Topics in Urban Sust. 3 Credits.

PSUS 6260. Intro to Sustainable Design. 2 Credits.

PSUS 6261. Ecology of the Built Env.. 2 Credits.

PSUS 6262. Tools for Sustainable Design. 3 Credits.

PSUS 6264. Native Plants I. 2 Credits.

PSUS 6265. Native Plants II. 1 Credit.

PSUS 6266. Ecological Restoration. 1 Credit.

PSUS 6268. Sustainable Design Methods. 2 Credits.

PSUS 6269. Sustenance and the Landscape. 2 Credits.

PSUS 6270. Sustainable Design Charrette. 3 Credits.
Preparation of a final project that demonstrates students' understanding of how to select and use sustainable site principles in a landscape design. Building and expanding upon techniques learned in previous coursework, students show comprehension of how their project site has boundaries within its surrounding ecosystem, but is still part of a larger life cycle. Students work in a concentrated charrette format to develop a site design that is fully sustainable and buildable.