

# BIOLOGICAL SCIENCES AND URBAN SUSTAINABILITY (PH.D. DUAL-TITLE)

Students admitted to the Ph.D. program in Biology can apply to earn a Ph.D. in Biology with a dual-title in Urban Sustainability. This dual title degree is designed to prepare professionals to solve challenging urban problems that require working across disciplines. Students enrolled in this dual-title program take courses in topics and develop specific skills relating to urban sustainability. Students in Biology will also conduct an internship or science exchange in Urban Sustainability, help develop and participate in colloquia and seminars, perform community service, and write funding proposals. The dual-title coursework follows competencies outlined by the Transformative Research in Urban Sustainability Training program.

Applicants must meet the admissions standards of the Graduate School (<http://bulletins.wayne.edu/graduate/general-information/admission/>) and the Department of Biological Sciences and be first offered admission to the Biology doctoral program.

Students are required to take six core courses plus 12 elective credits of Urban Sustainability coursework. A minimum of 7 of the 12 elective credits must be from coursework outside of the student’s home department.

Code	Title	Credits
<b>Core Courses</b>		
ANT 5060	Urban Anthropology	
BIO 7310	Sustainability of Urban Environmental Systems	
CE 5410	Energy, Emissions, Environment (E3) Design	
COM 7170	Health and Risk Communication	
GS 0900	Essential Research Practices: Responsible Conduct of Research	
UP 6470	Environmental Planning	
<b>Elective Courses</b>		
ANT 5565	Urban Archaeology	
ANT 6570	Archaeological Laboratory Analysis	
BIO 5040	Biometry	
BIO 5180	Field Investigations in Biological Sciences	
BIO 6420	Ecotoxicology and Risk Assessment	
BIO 7011/ PHC 7410	Principles of Toxicology	
BIO 7540	Landscape Ecology	
CE 6270	Sustainability Assessment and Management	
CE/PSC 6910	Pharmaceutical Waste: Environmental Impact and Management	
CE 7280	Applied Environmental Microbiology	
CE 7995	Special Topics in Civil Engineering II <sup>1</sup>	
COM 7160	Crisis Communication	
ECO 6200	Advanced Regulation and Regulated Industries	
ECO 6520	Advanced State and Local Public Finance	
ECO 6800	Advanced Urban and Regional Economics	
FPH 7420	Principles of Environmental Health	
ESG 5000	Geological Site Assessment	
ESG 5510	Environmental Fate and Transport of Pollutants	
ESG 5610	Special Topics in Environmental Science and Geology	

LEX 7231	Environmental Law
UP 5110	Urban Planning Process
UP 5430	Cities and Food
UP 6120	Planning Studies and Methods
UP 6260	Land Use Policy and Planning
UP 6700	Geographic Information Systems

<sup>1</sup> In order to satisfy the elective requirement, the topic area must be relevant to the program. Students should consult with their advisor for details.