O'Neill SPEA

Administrative Officers

Indiana University Leadership

Bloomington Campus Leadership

Indianapolis Campus Leadership

O'Neill School of Public and Environmental Affairs Administrative Officers

O'Neill School of Public and Environmental Affairs Dean's Council

Overview

The O'Neill School of Public and Environmental Affairs, the nation's largest school of its kind, is a professional school dedicated to applied, interdisciplinary learning combining the study of public affairs and environmental sciences. The interests of the faculty and professional staff typically fall into one or more of the following areas:

- arts administration
- criminal justice
- environmental science and policy
- finance and economics
- healthcare management
- homeland security
- law
- nonprofit management
- policy and administration
- public management
- public safety
- urban affairs

The school's faculty, staff, and students work individually and jointly to solve problems that require a unique combination of in-depth knowledge in the natural, behavioral, social, and administrative sciences.

The O'Neill School, because of its broad program base, offers scientific and technical assistance to Indiana communities from all eight Indiana University campuses. The school maintains a wide network of relations with a large number of public agencies at all levels of government.

The degree programs offered by the O'Neill School of Public and Environmental Affairs range from the associate degree, offered primarily on some of the regional campuses, to the Ph.D. The school offers eight professional master's degrees for individuals interested in achieving leadership positions in public, private, and nonprofit organizations:

- Master of Arts in Arts Administration (M.A.A.A.)
- Master of Environmental Sustainability (M.E.S.)
- Master of Science in Healthcare Management (M.S.H.M.)
- Master of International Affairs (M.I.A.)
- Master of Public Affairs (M.P.A.)
- Master of Public Management (M.P.M.)
- Master of Science in Criminal Justice and Public Safety (M.S.C.J.P.S.)
- Master of Science in Environmental Science (M.S.E.S.)

The M.P.A. is a professional degree structured around concepts and skills essential to public management, policy, and planning activities in the government, nonprofit, and private sectors. The M.E.S. produces trained professionals ready to start confronting environmental issues from the moment they graduate. The M.S.E.S. provides students with a strong background in environmental sciences while emphasizing the applied aspects of environmental research and management. The M.S.H.M. is aimed at recent college graduates who are seeking the skills and credentials that will enable them to obtain entry level positions in the healthcare management field. The M.A.A.A. prepares students for careers in arts management and cultural policy. The M.I.A. provides students the skills necessary to work effectively in global institutions across the public, private, and nonprofit sectors. The M.S.C.J.P.S. combines coursework in criminal justice, public safety and management to address increasing demand for advanced education in criminal justice and public safety. The M.P.M. program is an interdisciplinary professional program structured around concepts and skills essential to management, policy, planning activities within governmental, quasi-governmental, and nonprofit organizations. Additionally, O'Neill's M.P.A., M.S.E.S. and M.P.M. may be pursued in combination with degrees in law, library science, biology, information science, journalism, geography, geological sciences, and degrees offered by a number of area studies centers and institutes.

At the doctoral level, the O'Neill School offers:

- Ph.D. in Environmental Science
- Ph.D. in Public Affairs
- Ph.D. in Public Policy

The Ph.D. in public policy is jointly delivered with the Department of Political Science. The Ph.D. in environmental science is delivered by the O'Neill School with the cooperation of the Departments of Biology, Chemistry, Geography, Geological Sciences, and others.

Contact Information

Bloomington Graduate Program Offices
The O'Neill School of Public and Environmental Affairs
Indiana University
1315 E. Tenth Street
Bloomington, IN 47405-1701

Master's Programs Office
O'Neill Center A304
Phone: (812) 855-2840
Toll Free: (800) 765-7755
Fax: (812) 855-7802
Email: oneillgd@indiana.edu

Ph.D. in Environmental Science Program Office
MSB II 322
Phone: (812) 855-0193
Toll Free: (800) 633-0023
Fax: (812) 855-7547
Email: kdevich@iu.edu

Ph.D. in Public Affairs and Ph.D. in Public Policy Program Office
SPEA 441

Phone: (812) 855-2457
Toll Free: (800) 765-7755
Fax: (812) 855-7802
Email: swangok@indiana.edu

Indianapolis Graduate Programs
O'Neill School of Public and Environmental Affairs
Indiana University-Purdue University Indianapolis
Business/O'Neill Building 3025
801 W. Michigan Street
Indianapolis, IN 46202-5152
Phone: (317) 274-4656
Toll Free: (877) 292-9321
Fax: (317) 274-5153
Email: oneillqa@iupui.edu

Admission

Application

Information about graduate study, including literature and application materials, may be obtained from the O'Neill School of Public and Environmental Affairs offices.

- How to apply to our master's programs
- How to apply to our doctoral programs

Bloomington Campus

Eligibility

For most programs, applicants with bachelor's degrees in any field from an accredited institution are eligible to apply for admission to the graduate programs of the O'Neill School of Public and Environmental Affairs.

M.S.E.S: The M.S.E.S. Admissions Committee looks for applicants to have an adequate background in quantitative and natural science subjects. As a minimum, an applicant must have completed at least one semester of: calculus and chemistry with laboratory. Familiarity with statistics and biology/ecology is considered desirable.

Application Submission

Applicants should apply to a degree program and indicate interest in O'Neill School funding consideration as early as possible before the desired semester of enrollment. Priority admission and funding consideration is given to students who complete their application file by the priority deadline set for their application term. International students must submit application materials as early as possible, but not later than the international student application deadline. All applications must be received by the final application deadline. Applications are accepted after that date on a case-by-case basis.

Admission

Each application for admission is carefully evaluated by the admissions committee for the appropriate degree. Applicants to all O'Neill master's degree programs must do the following:

- Submit applications to the relevant program.
- Submit an unofficial transcript from all colleges and universities attended in the application for admission. Applicants will need to submit official transcripts to the O'Neill School showing a conferred undergraduate degree prior to starting the program. Students who have taken course work on any Indiana University campus do not need to submit an Indiana University transcript.
- Pay a nonrefundable application fee to Indiana University.
- Submit three letters of recommendation. Applicants must provide contact information for three individuals to provide letters of recommendation in the application for admission. Individuals should be familiar with the applicant's activities and potential to succeed in graduate work.
- Submit a personal essay and resume. Include any supplemental materials that may further support a case for admission. A professional or academic writing sample will be required for arts administration applicants.
- Submit proof of bachelor's degree certification from an accredited institution. Students who have not completed undergraduate course work at the time of application may be admitted based on the strength of previous work, but a final transcript attesting to the award of a bachelor's degree must be submitted before the student can enroll. Normally, a cumulative grade point average of 3.0 (4.0 = A) is the minimum for regular admission. All applicants must submit official transcripts if they provided unofficial transcripts during the application process.
- GRE scores are not required for admission to O'Neill master's degree programs. If students wish to have GRE scores included as supplementary material, they will have to answer "yes" to a question in the application that asks if they would like to have GRE scores considered in their review and submit all GRE scores officially from the testing agency. GRE scores can be sent electronically through ETS to Indiana University, institution code 1324. Unofficial scores are not accepted.
- International applicants: Scores from an English proficiency exam are required if the applicant's undergraduate degree was completed in a non-English speaking country.

Indianapolis Campus

Eligibility

For most programs, applicants with bachelor's degrees in any field from an accredited institution are eligible to apply for admission to the graduate programs of the O'Neill School of Public and Environmental Affairs. Application Information about graduate study including literature and application materials, may be obtained from the IUPUI O'Neill School of Public and Environmental Affairs.

Admission Status

Regular (Unconditional) Admission Status

Applicants have met all admission requirements for the specific degree program and enroll in accordance with the entry date contained in the application for admission.

Deferred Admission

Following notice of regular admission, applicants may defer enrollment for a maximum of one year. A candidate must submit the enrollment deposit in order to officially have deferral status.

Provisional Admission

On some campuses applicants may be admitted on a provisional basis if GRE or LSAT scores or prior grade

point averages are below admission criteria. Provisional status is removed upon fulfillment of conditions stipulated by the respective degree program admissions committee.

Admission with Deficiencies

Applicants may be admitted with deficiencies on a case-by-case basis if they lack course work in certain foundation areas such as mathematics, economics, or statistics. Campus and degree policies may vary.

Nondegree Enrollment

Applicants who have a bachelor's degree and who have not been admitted to the graduate program may enroll in O'Neill courses as nondegree graduate students. Procedures may vary across campuses.

If nondegree students later wish to obtain O'Neill graduate degrees, they must apply for admission to the specific degree program. Satisfactory performance as a non-degree student does not guarantee acceptance into a professional program.

Programs

The O'Neill School of Public and Environmental Affairs offers a variety of graduate degree and certificate programs on six of the eight Indiana University campuses: Bloomington, Indianapolis, Fort Wayne, Northwest, South Bend, and Kokomo.

Degree and Certificate Programs by Campus

Bloomington

M.P.A.

- Community and Economic Development
- Energy and Climate Policy
- Environmental Policy and Natural Resource Management
- Health Policy
- Information Systems
- International Development
- Local Government Management
- Nonprofit Management
- Policy Analysis
- Public Financial Administration
- Public Management
- Sustainability and Sustainable Development
- Specialized

M.P.A. Dual Degrees

- Master of Public Affairs–Master of Science in Environmental Science (M.P.A.–M.S.E.S.)
- Master of Public Affairs-Master of Arts in Arts Administration (M.P.A.-M.A.A.A.)
- Master of Public Affairs–Doctor of Jurisprudence (M.P.A.–J.D.)
- Master of Public Affairs–Master of Arts in African American and African Diaspora Studies (M.P.A.–M.A.)
- Master of Public Affairs–Master of Arts in African Studies (M.P.A.–M.A.)
- Master of Public Affairs–Master of Arts in Central Eurasian Studies (M.P.A.–M.A.)
- Master of Public Affairs–Master of Arts in East Asian Studies (M.P.A.–M.A.)
- Master of Public Affairs–Master of Information Science (M.P.A.–M.I.S.)
- Master of Public Affairs–Master of International Affairs (M.P.A.–M.I.A.)
- Master of Public Affairs–Master of Arts in Latin American and Caribbean Studies (M.P.A.–M.A.)
- Master of Public Affairs-Master of Arts in Middle Eastern Languages and Cultures (M.P.A.-M.A.)
- Master of Public Affairs–Master of Arts in Russian and East European Studies (M.P.A.–M.A.)
- Master of Public Affairs–Master of Arts in European Studies (M.P.A.–M.A.)
- Master of Public Affairs–Master of Library Science (M.P.A.–M.L.S.)
- Master of Public Affairs-Master of Science in Cybersecurity Risk Management (M.P.A.–M.S.)

International M.P.A. Dual Degree

- Master of Public Affairs-Master of Public Administration with Seoul National University (M.P.A.-M.P.A.)

M.E.S.

- Environmental Quality and Toxicology
- Municipal Sustainability
- Sustainable Natural Resource Conservation and Management
- Sustainable Water Resources

M.S.E.S.

- Ecology and Conservation
- Energy and Climate Change Science
- Environmental Chemistry, Toxicology, and Risk Assessment
- Specialized
- Thesis
- Water Resources

M.S.E.S. Dual Degrees

- Master of Science in Environmental Science–Doctor of Jurisprudence (M.S.E.S.–J.D.)
- Master of Science in Environmental Science–Master of Public Affairs (M.S.E.S.-M.P.A.)
- Master of Science in Environmental Science–Master of Science in Chemistry (M.S.E.S.–M.S)
- Master of Science in Environmental Science–Master of Science in Geological Sciences (M.S.E.S.–M.S.)
- Master of Science in Environmental Science–Master of Science in Intelligent Systems Engineering (M.S.E.S.–M.S.)
- Master of Science in Environmental Science–Master of Science in Physics (M.S.E.S.–M.S.)

M.I.A. - Joint Degree with Hamilton-Lugar School of Global and International Studies

- Security, Diplomacy, and Governance
- Finance and Trade
- Global Development, Environment, and Sustainability

M.S.H.M. - Joint Degree with Kelley School of Business

- Master of Science in Healthcare Management (M.S.H.M.)

M.A.

- Arts Administration

M.A. Dual Degrees

- Master of Arts in Arts Administration-Master of Public Affairs (M.A.A.A.-M.P.A.)
- Master of Arts in Arts Administration-Master of Arts in Musicology (M.A.A.A.-M.A.M.)
- Master of Arts in Arts Administration-Master of Folklore and Ethnomusicology (M.A.A.A-M.A.F.E.)

International M.A. Dual Degree

- Master of Arts in Arts Administration-Master of Arts in Cultural Policy and Arts Management with University College Dublin (M.A.A.A.-M.A.C.P.A.M.)

Ph.D.

- Environmental Science
- Public Affairs
- Public Policy

Ph.D. Minors

- Arts Administration (Information on the Doctoral Minor in Arts Administration can be found at https://bulletins.iu.edu/iu/gradschool/2019-2020/programs/bloomington/arts-administration/index.shtml)
- Environmental Science
- Environmental Studies
- Nonprofit Management
- Public Management
- Regional Economic Development
- Urban Affairs

Certificates

- Hazardous Materials Management
- Nonprofit Management
- Public Budgeting and Financial Management
- Public Management
- Public and Nonprofit Evaluation
- Rural Arts Administration
- Social Entrepreneurship

Indianapolis

M.P.A.

- Criminal Justice
- Nonprofit Management
- Policy Analysis
- Public Management
- Urban Sustainability
- Master of Science in Criminal Justice and Public Safety

M.P.A. Dual Degrees

- Master of Public Affairs–Doctor of Jurisprudence (M.P.A.–J.D.)
- Master of Public Affairs–Master of Arts in Philanthropic Studies (M.P.A.–M.A.)

M.S.C.J.P.S.

- Criminal Justice and Public Safety

Ph.D. Minor

- Nonprofit Management

Certificates

- Executive Graduate Certificate in Library Management
- Homeland Security and Emergency Management
- Master of Library Science - Public Management Certificate
- Master of Library Science - Nonprofit Management Certificate
- Master of Library Science - Executive Graduate Certificate in Library Management
- Nonprofit Management
- Public Management
- Social Entrepreneurship

Additional information on degree requirements through Indianapolis O'Neill SPEA may be obtained here.

Bloomington Campus

Master of Public Affairs (M.P.A.)

- Residential
- Online

Master of Public Affairs Dual Degree Programs

Master of Environmental Sustainability (M.E.S.)

Master of Science in Environmental Science (M.S.E.S.)

Master of Science in Environmental Science Dual Degree Programs

Master of Science in Healthcare Management Joint Degree (M.S.H.M.)

Master of International Affairs Joint Degree (M.I.A.)

Master of Arts in Arts Administration (M.A.A.A.)

Master of Arts in Arts Administration Dual Degree Programs

Doctor of Philosophy (Ph.D.) in Environmental Science

Doctor of Philosophy (Ph.D.) in Public Affairs

Doctor of Philosophy (Ph.D.) in Public Policy

Doctoral Minors

Certificate Programs

Master of Public Affairs

The Master of Public Affairs program is an interdisciplinary, professional program that prepares students for positions in local, state, or federal government, quasi-governmental service, or the nonprofit (including philanthropic) arena. It broadens students' comprehension of the economic, environmental, political, and social context in which the public servant works. The Master of Public Affairs is offered in two modalities – residential or online. The course of study requires completion of:

Requirements

- MPA core requirements

- experiential requirement
- concentration requirements
- sufficient electives and/or prior professional experience credit to total 48 credit hours

The curriculum of this program as contained in the core requirements encompasses preparation in a broad range of skills relevant to the operation of public or nonprofit agencies. It is based on the academic disciplines but not limited to anyone. It is also problem-oriented, bringing the disciplines to bear on critical social, environmental, economic, and administrative issues.

Although the environment of public service is diverse and changing, effectiveness in that environment requires the development of special skills attained through detailed study in a chosen field of concentration. The fields of concentration span the variety of professional specialties found in public service. Thus, the program provides expertise in the core requirement and in a specific concentration area, as well as a general working knowledge of public affairs.

The M.P.A. program is fully accredited by the Network of Schools of Public Policy, Affairs, and Administration (NASPAA).

Fields of Concentration

Concentrations give students focused educational experiences in substantive areas of interest. Concentrations offered on the Bloomington campus are:

Residential

- Community and Economic Development
- Energy and Climate Policy
- Environmental Policy and Natural Resource Management
- Health Policy
- Information Systems
- International Development
- Local Government Management
- Nonprofit Management
- Policy Analysis
- Public Financial Administration
- Public Management
- Sustainability and Sustainable Development
- Specialized

Online

- Public Affairs

General Elective Courses

Graduate courses, or undergraduate courses approved for graduate credit, may be used to complete the overall degree requirement of 48 credit hours.

Accelerated Master of Public Affairs

This program allows the O'Neill School of Public and Environmental Affairs' top undergraduates to complete both their undergraduate and graduate degree in five years. To be considered for this program a student must have earned a minimum GPA of 3.5, completed 96 undergraduate credit hours, and satisfied all general-education and O'Neill School of Public and Environmental Affairs undergraduate core requirements. Because of the specialized nature of this program, potential applicants should contact the Bloomington undergraduate and graduate program director for details.

Degree Requirements

(48 credit hours) The core requirements of the M.P.A. degree consist of 24 credit hours of work in ten courses. Each student must also complete the requirements of (at least) one concentration.

The experiential requirement ensures that each graduate of the M.P.A. program has gained insight into the world of public service by way of an experience outside the classroom. This experience may or may not involve the accumulation of credit hours toward the degree.

The remaining credit hours necessary for graduation, if any, are general electives that can be used to add breadth to a student's program; to further explore a field of concentration; or to enhance skills in foreign languages, quantitative tools, or administrative techniques.

Residential Core Requirements

(24 credit hours) The M.P.A. core is designed to ensure that each student acquires both the prerequisite analytical skills and an understanding of policy issues and governmental processes that compose the environment within which graduates will pursue their careers.

Requirement I: Required Courses (24 credit hours)

SPEA-F 560	Public Finance and Budgeting	(3 cr.)
SPEA-V 506	Statisitcal Analysis for Effective Decision Making	(3 cr.)
SPEA-V 512 **OR** V538	Public Policy Process **OR** Comparative and International Policy Process	(3 cr.)
SPEA-V 517	Public Management Economics	(3 cr)
SPEA-V 532	Social Equity and Justice in Public Affairs	(1.5 cr.)
SPEA-V 535	Managing and Leading in Public Affairs	(3 cr.)
SPEA-V 536	Rights and Responsibilities: How Law Shapes Public Affairs	(1.5 cr.)
SPEA-V 537	Designing and Managing Complex Projects	(1.5 cr.)
SPEA-V 548	Evidence-Based Decision Making	(1.5 cr.)
SPEA-V 600	Capstone in Public and Environmental Affairs	(3 cr.)

***Note:** Extremely well-prepared applicants may petition the program director to waive one or more of the core requirements on the basis of advanced course work done elsewhere. Students may be exempted on the basis of satisfactory equivalent course work or by examination.

Credit hours waived from the core add to the electives a student may use. Students requesting course waivers should contact the appropriate graduate program director for requirements and guidelines.

Online Core Requirements

(24 credit hours) The M.P.A. core is designed to ensure that each student acquires both the prerequisite analytical skills and an understanding of policy issues and governmental processes that compose the environment within which graduates will pursue their careers.

Required Courses: (24 credit hours)

SPCN-F 560	Public Finance and Budgeting	(3 cr.)
SPCN-V 506	Statisitcal Analysis for Effective Decision Making	(3 cr.)
SPCN-V 512 **OR** V538	Public Policy Process **OR** Comparative and International Policy Process	(3 cr.)
SPCN-V 517	Public Management Economics	(3 cr)
SPCN-V 532	Social Equity and Justice in Public Affairs	(1.5 cr.)
SPCN-V 535	Managing and Leading in Public Affairs	(3 cr.)
SPCN-V 536	Rights and Responsibilities: How Law Shapes Public Affairs	(1.5 cr.)
SPCN-V 537	Designing and Managing Complex Projects	(1.5 cr.)
SPCN-V 548	Evidence-Based Decision Making	(1.5 cr.)
SPCN-V 600	Capstone in Public and Environmental Affairs	(3 cr.)
	OR	
SPCN-V 551	O'Neill Online Week *Students wishing to pursue this option must first successfully complete at least 12 credit hours of Core coursework and have at least two years of professional work experience before the course begins. Interested students should submit the O'Neill Online Week for Capstone form.	(3 cr.)

***Note:** Extremely well-prepared applicants may petition the program director to waive one or more of the core requirements on the basis of advanced course work done elsewhere. Students may be exempted on the basis of satisfactory equivalent course work or by examination. Credit hours waived from the core add to the electives a student may use. Students requesting course waivers should contact the appropriate graduate program director for requirements and guidelines.

Experiential Requirements

Each M.P.A. student must obtain professionally relevant experience through one of the following options: an approved internship (includes research internships) (SPEA-V 585; 0-6 credit hours), or the award of prior professional experience credit.

Prior Experience

A student's experiential requirement may be satisfied through Prior Experience (PE). Depending upon the type and amount of experience, a student may qualify for a credit reduction as well. There are three categories of PE (Professional, Military, and Volunteer) available to MPA, MSES, MPA-MSES, MIA, and MES students. MAAA and MAAA-MPA students have different guidelines for PE, as they are governed by the University Graduate School.

Applications are available for the different types of PE online via the Current Student Portal in the Forms section. Completed forms will be advanced to the appropriate Faculty Program Director for review.

- PE waivers and credit reductions are granted for experience gained prior to taking courses in the MPA, MES, MIA, and MSES programs.
- Students are encouraged to submit applications for PE within the first 24-credit hours.
- Students may be approved for more than one type of PE, but the combined credit reduction cannot exceed 9-credit hours.
- Credit reductions cannot result in the elimination of degree or concentration requirements. Students receiving prior experience credit reductions should carefully plan the balance of their program with an advisor.
- A student may not apply for PE with any of O'Neill's outside, dual degree programs (e.g., MPA-MA, MSES-JD). All of O'Neill's outside dual degree programs reflect a discounted credit hour program in an effort to streamline the academic demands for the student. Further credit reductions are not negotiable. This does not apply to O'Neill's dual MPA-MSES and MAAA-MPA degree.
- Determination of PE credit is made separately from decisions about transfer of credit. Under no circumstances will the prior experience credit and transfer credit total more than 18-credit hours.

Professional Experience:
Experiential waivers and credit reductions can be granted for prior professional or technical work experience. The appropriate Faculty Program Director determines if the experience qualifies for a waiver and/or reduction.

In general, credit reductions require work experience above entry level that involves some independent managerial, analytic, or scientific responsibility and work that articulates with the student's current field of study. Applicants may appeal a professional credit decision by submitting a request, in writing, for reconsideration and providing additional information. Students receiving prior professional experience credit should carefully plan the balance of their program with a faculty advisor.

General guidelines to qualify for Professional Experience:

- Work must have been full-time, either paid or unpaid.
- To receive a waiver of the degree's experiential requirement, work experience should roughly equal or surpass that of a summer internship.
- To qualify for credit reduction in addition to a waiver of the experiential requirement, at least two years of relevant full-time work is required.
- Position may be with government, private firm, or nonprofit organization, but the work must be explicitly related to a MPA or MSES career path, regardless of the type of employer.
- Employing entity may be domestic or international. Documentation from supervisors may be required.

Professional Experience MPA Guidelines:

- To receive a 3-credit hour reduction, a student must have 2-4 years of full-time technical, administrative, or policy-level work experience with a government, nonprofit, or private agency.
- 6-credit hours is generally possible for 4-6 years of relevant full-time managerial and/ or policymaking experience in any sector, such as program leadership, budgetary oversight, organizational or staff development, fundraising, analysis, planning, or human resources supervision.
- A 9-credit hour reduction is possible for over 6 years of relevant full-time managerial and/or policymaking experience. At this point, at least one higher-level, multi-year assignment is expected, including responsibility for supervision of staff, budget preparation, or organizational control of public or nonprofit agencies.

Military Experience:
Students who have experience with the United States military may qualify for a waiver of the experiential requirement and a credit reduction. See guidelines below:

- 3-credit hour reduction and experiential waiver:
  - 1 year active duty or full-time guard/reserve service
  - 2 years part-time guard/reserve service
- 6-credit hour reduction and experiential waiver:
  - 2 years active duty or full-time guard/reserve service
  - 4 years part-time guard/reserve service
- 9-credit hour reduction and experiential waiver:
  - 4 years active duty or full-time guard/reserve service
  - 8 years part-time guard/reserve service

Volunteer Experience:
Students who have participated as a volunteer in Peace Corps, AmeriCorps, or Teach For America are eligible for a credit reduction based on years of service, as well as a waiver of their experiential component. The O'Neill School will grant a 3-credit reduction for one year of service and a 6-credit reduction for two years of service. Proof of service will be required.

Concentration Requirements

(15 credit hours) Concentrations give students educational experiences in a substantive area of interest. The course of study in each concentration area is determined in conjunction with an advisor. Up to 3 credit hours of the concentration may be taken in V 585 Practicum in Public Affairs, if approved in advance by an advisor.

Concentration requirements may be waived on the same basis as core requirements. Consult with an advisor about course prerequisites.

Community and Economic Development

(15 credit hours) The Community and Economic Development concentration prepares students for professional positions that help people develop sustainable communities and enhance the economy at the local and regional level. Students may not use MPA core courses to fulfill concentration requirements.

Required Courses: (6 credit hours)

The following **two** courses are required:

SPEA-L 563	Planning and Community Development	(3 cr.)
SPEA-L 622	Local Economic Development	(3 cr.)

Electives: (9 credit hours)

Group I - Select **one** of the following three courses:

SPEA-E 518	Vector-based Geographic Information Systems	(3 cr.)
SPEA-M 547	Negotiation and Dispute Resolution for Public Affairs	(3 cr.)
SPEA-P 507	Data Analysis and Modeling for Public Affairs	(3 cr.)

Group II - In consultation with a concentration advisor, select **two** courses from the above list and from the following courses:

AADM-Y 551	Cultural Planning and Urban Development	(3 cr.)
SPEA-D 573	Development Economics	(3 cr,)
SPEA-D 576	Approaches to Development	(3 cr.)
SPEA-D 578	Introduction to Comparative and International Affairs	(3 cr.)

SPEA-D 669	Economic Development, Globalization, and Entrepreneurship	(3 cr.)
SPEA-F 609	Seminar in Revenue Theory and Administration	(3 cr.)
SPEA-F 610	Government Budget and Program Analysis	(3 cr.)
SPEA-F 667	Seminar in Public Capital and Debt Theory	(3 cr.)
SPEA-I 516	Public Management Information Systems	(3 cr.)
SPEA-L 564	Local Governance	(3 cr.)
SPEA-L 568	Management of Local Government Services	(3 cr.)
SPEA-M 602	Strategic Management for Public and Nonprofit Organizations	(3 cr.)
SPEA-N 521	The Nonprofit and Voluntary Sector	(3 cr.)
SPEA-P 541	Benefit Cost Analysis	(3 cr.)
SPEA-P 562	Public Program Evaluation	(3 cr.)
SPEA-R 563	Corporate Sustainability in a Tri-Sectoral World	(3 cr.)
SPEA-S 596	Sustainable Development	(3 cr.)

Or other relevant SPEA courses may count toward the elective requirement with the approval of a community and economic development concentration advisor.

Energy and Climate Policy

(15 credit hours) The Energy and Climate Policy concentration prepares students to contribute in the areas of energy generation, use and impact, focus on energy policies, behaviors, and technologies and their socioeconomic and environmental consequences. MPA students will focus primarily on economics-based quantitative methods, behavioral science contributions to energy production and conservation projects, and the application of qualitative and quantitative methods in community settings. Students may not use MPA core courses to fulfill concentration requirements.

Required Courses (6 credit hours)

SPEA-E 574	Energy Systems in Transition	(3 cr.)
SPEA-R 674	Energy Economics and Policy	(3 cr.)

Electives (9 credit hours)

In consultation with a concentration advisor, students select a mixture of science and policy courses related to energy in accordance to professional goals. Students must take a total of three electives courses from the Natural Science (Group I) and Economics, Public Policy, and Law (Group II) electives listed below. At least **one** course must be taken from **each** of the following groups.

Group I - Natural Science Electives (Choose one or two of the following courses)

SPEA-E 515	Fundamentals of Air Pollution	(3 cr.)
SPEA-E 518	Vector-based Geographic Information Systems	(3 cr.)
SPEA-E 529	Application of Geographic Information Systems	(3 cr.)
SPEA-E 536	Environmental Chemistry	(3 cr.)
SPEA-E 591	Climate Change Impacts on Natural Resources	(3 cr.)
SPEA-R 515	Renewable and Nuclear Energy and Climate Change	(3 cr.)
EAS-G 576	Climate Change Science	(3 cr.)
GEOG-G 532	Physical Climatology	(3 cr.)

Group II - Economics, Public Policy and Law-Related Electives (choose one or two of the following courses)

SPEA-X 511/ SPEA-E 501	Human Behavior and Energy Consumption	(3 cr.)
SPEA-P 541	Benefit Cost Analysis	(3 cr.)
SPEA-P 562	Public Program Evaluation	(3 cr.)
SPEA-R 512/ LAW-L 660	Energy and Climate: Law and Policy	(3 cr.)
SPEA-R 532	Water Policy and Economics	(3 cr.)
SPEA-R 533/ LAW-B 675	Public Natural Resources Law	(3 cr.)
SPEA-R 535	International Environmental Policy	(3 cr.)
SPEA-R 564	Environmental and Natural Resource Policy Design and Implementation	(3 cr.)
SPEA-R 625	Environmental Economics and Policy	(3 cr.)
SPEA-R 626	Energy Policy Seminar	(3 cr.)

SPEA-R 643	Natural Resource Management and Policy	(3 cr.)
SPEA-R 645	Environmental Law	(3 cr.)
SPEA-S 516	Preparing for Climate Change and Resilient Urban Communities	(3 cr.)
SPEA-S 596	Sustainable Development	(3 cr.)
SPEA-V 550/ LAW-B 644	Energy Law and Policy	(3 cr.)
INTL-I 525	International Climate Governance	(3 cr.)
MSCH-T 602	Communicating Climate Change	(3 cr.)

Environmental Policy and Natural Resource Management

(15 credit hours) The Environmental Policy and Natural Resources Management concentration draws on economics, statistics, and other quantitative fields to help students develop analytical skills to interpret and use data for the formation and evaluation of policy for environmental protection and natural resources management. The concentration draws on the study of law, politics, public policy, and management to build an understanding of the institutions through which society manages the formation and implementation of its policies. Students acquire a set of skills and insights that they will use in careers in government and consulting, in the regulatory and government relations offices of corporations, and in the advocacy and analysis operations of not-for-profit organizations. Students can focus their studies on either domestic or international environmental and natural resource issues. Students may not use MPA core courses to fulfill concentration requirements.

Environmental Law and Economics (6 credit hours)
The following courses are required:

SPEA-R 625	Environmental Economics and Policy	(3 cr.)
SPEA-R 645	Environmental Law	(3 cr.)

Group I - Environmental Policy Courses (3 credit hours)
In consultation with a concentration advisor, choose **one** of the following courses:

SPEA-R 521	Domestic Environmental Policy	(3 cr.)
SPEA-R 535	International Environmental Policy	(3 cr.)

Group II - Analysis and Skills Courses (3 credit hours)
In consultation with a concentration advisor, choose **one** from the following list of courses:

SPEA-E 518	Vector-Based Geographic Information Systems	(3 cr.)
SPEA-E 529	Application of Geographic Information Systems	(3 cr.)
SPEA-E 560	Environmental Risk Analysis	(3 cr.)
SPEA-I 515	Data Science for Public and Environmental Affairs	(3 cr.)
SPEA-M 547	Negotiation and Dispute Resolution for Public Affairs	(3 cr.)
SPEA-P 507	Data Analysis and Modeling for Public Affairs	(3 cr.)
SPEA-P 541	Benefit Cost Analysis	(3 cr.)
SPEA-P 562	Public Program Evaluation	(3 cr.)

Group III - Context Courses (3 credit hours)
In consultation with a concentration advisor, choose **one** from the following list of courses:

SPEA-E 543	Environmental Management (cannot count as context course for MPA-MSES dual degree)	(3 cr.)
SPEA-R 517	Environmental Justice	(3 cr.)
SPEA-R 532	Water Policy and Economics	(3 cr.)
SPEA-R 564	Environmental and Natural Resource Policy Implementation	(3 cr.)
SPEA-R 626	Energy Policy Seminar	(3 cr.)
SPEA-R 643	Natural Resources Management and Policy	(3 cr.)
SPEA-R 674	Energy Economics and Policy	(3 cr.)
SPEA-S 596	Sustainable Development	(3 cr.)

Note: MPA students with a concentration in Environmental Policy and Natural Resource Management who want to take SPEA-E 543 must take both V535 and E543. Students can count E543 as a concentration elective.

Health Policy

(15 credit hours) The Health Policy concentration is designed to provide students with a strong grounding that prepares them for employment in the growing sectors of health policy, health care and life sciences management,

and international health sectors, as well as for pursuing Ph.D. programs in health policy.

Required Courses (9 credit hours)

The following three courses are required:

SPEA-H 549	Health Policy	(3 cr.)
SPEA-P 507	Data Analysis and Modeling for Public Affairs	(3 cr.)
SPEA-P 562	Public Program Evaluation	(3 cr.)

Economics, Finance and Regulation Components (6 credit hours)

Select two of the following courses:

SPEA-H 524	Health Industry Regulation	(3 cr.)
SPEA-H 525	Health Economics for Policy and Management	(3 cr.)
SPEA-H 526	Healthcare Finance	(3 cr.)
SPEA-H 527	International Healthcare Systems	(3 cr.)
SPEA-N 557	Proposal Development and Grant Management	(3 cr.)
BUS-X 518	Business of Life Sciences: Trends	(1.5 cr.)
BUS-X 519	Business of Life Sciences: Value Chain	(1.5 cr.)

Information Systems

(15 credit hours) The information systems (IS) concentration prepares students for entry-level and mid-career positions—such as systems analysts, consultants, Webmasters, and database managers—in the exciting, evolving, and rapidly growing fields of computing and communication technologies as they apply to public organizations. The IS concentration builds on a solid core of three courses and provides the flexibility to add three more electives from a wide range of course offerings. Students are encouraged to combine the IS concentration with other concentrations to strengthen their technical skills in a variety of applied areas.

Required Courses (6 credit hours)

The following two courses are required:

SPEA-I 516	Public Management Information Systems	(3 cr.)
SPEA-I 519	Database Management Systems	(3 cr.)

Electives (9 credit hours)

Three courses from the following information systems application groups. (Note: Two of the courses must be from group I, II, or III.)

Group I: Geographic Information Systems

SPEA-E 518	Vector-based Geographic Information Systems	(3 cr.)
SPEA-E 529	Application of Geographic Information Systems	(3 cr.)

Group II: Decision Support and Analysis

SPEA-E 560	Environmental Risk Analysis	(3 cr.)
SPEA-P 507	Data Analysis and Modeling for Public Affairs	(3 cr.)
SPEA-P 539	Management Science for Public Affairs	(3 cr.)
SPEA-P 541	Benefit Cost Analysis	(3 cr.)
SPEA-P 562	Public Program Evaluation	(3 cr.)
SPEA-V 550	Data Science for Public and Environmental Affairs	(3 cr.)

Group III: Design and Management of Information Systems

SPEA-I 611	Design of Information Systems	(3 cr.)
SPEA-M 602	Strategic Management of Public and Nonprofit Organizations	(3 cr.)

Group IV: Networking and Telecommunications

BUS-S 515	Foundations of Business Telecommunications	(3 cr.)
ILS-Z 525	Government Information	(3 cr.)
ILS-Z 532	Information Architecture for the Web	(3 cr.)
ILS-Z 643	The Information Industry	(3 cr.)

Group V: Additional Options

Graduate courses that address issues in information technology, such as programming and the digital economy, are offered in other units such as the Kelley School of Business and the Luddy School of Informatics, Computing, and Engineering. Students may elect to take

one of these electives (3 credit hours) in an outside unit with the approval of a concentration advisor and the appropriate Faculty Program Director.

International Development

(15 credit hours) The International Development concentration in the Master of Public Affairs is designed to provide students with a policy-focused understanding of international development and will introduce students to topics such as economic programming and planning, political economy, conflict and post-conflict recovery, sustainable development, international organizations, governance and business activities. Students may not use MPA core courses to fulfill concentration requirements.

Required Courses (6 credit hours)

Students choose **two** of the following **three** courses:

SPEA-D 573	Development Economics	(3 cr.)
SPEA-D 578	Introduction to Comparative and International Affairs	(3 cr.)
SPEA-D 669	Economic Development, Globalization and Entrepreneurship	(3 cr.)

Electives (9 credit hours)

In consultation with a concentration advisor, students choose **three** electives from Groups I and II where at least **one** course (3 credit hours) is from Group I (methods).

Group I* - Methods

SPEA-E 518	Vector-based Geographic Information Systems	(3 cr.)
SPEA-P 507	Data Analysis and Modeling for Public Affairs	(3 cr.)
SPEA-P 541	Benefit Cost Analysis	(3 cr.)
SPEA-P 562	Public Program Evaluation	(3 cr.)

*A student may also choose to fulfill the Group A requirement with a graduate level *language* or *area studies* course with the approval of a concentration advisor and the appropriate faculty program director.

Group II - Other Electives

SPEA-D 548	US Foreign Policy and Third World Regimes	(3 cr.)
SPEA-D 576	Approaches to Development	(3 cr.)
SPEA-D 577	International Economic Strategies and Trade Policy	(3 cr.)
SPEA-D 583	Conflict and Development	(3 cr.)
SPEA-M 575	Comparative Public Management and Administration	(3 cr.)
SPEA-M 654	Public Program Management and Contracting	(3 cr.)
SPEA-N 524	Civil Society in Comparative Perspective	(3 cr.)
SPEA-N 534	NGO Management for International Development	(3 cr.)
SPEA-R 535	International Environmental Policy	(3 cr.)
SPEA-R 563	Corporate Sustainability in a Tri-Sectoral World	(3 cr.)
SPEA-S 596	Sustainable Development	(3 cr.)
SPEA-V 550	Latin American Governance	(3 cr.)
SPEA-V 559	Principles and Practices of Social Entrepreneurship	(3 cr.)

Local Government Management

(15 credit hours) The Local Government Management (LGM) concentration prepares students for entry-level and mid-career management and policy positions in local government. Course work includes a local government management core required of all students and a selection of advanced electives. Students should consult with a faculty concentration advisor to choose the advanced electives best suited to their interests. Students may not use MPA core courses to fulfill concentration requirements.

Required Courses (9 credit hours)

The following three courses are required:

SPEA-L 564	Local Governance	(3 cr.)
SPEA-L 568	Management of Local Government Services	(3 cr.)
SPEA-M 561	Public Human Resources Management	(3 cr.)

Advanced Local Government Concentration Electives (6 credit hours)

In consultation with a concentration advisor, select **two** of the following courses or other graduate courses approved as substitutions:

AADM-Y 500	Cultural Districts and Local Arts Policy	(3 cr.)
AADM-Y 504	Arts Administration in the Public and Private Sectors	(3 cr.)
SPEA-F 610	Government Budget and Program Analysis	(3 cr.)

SPEA-I 515	Data Science for Public and Environmental Affairs	(3 cr.)
SPEA-I 516	Public Management Information Systems	(3 cr.)
SPEA-L 563	Planning and Community Development	(3 cr.)
SPEA-L 622	Local Economic Development	(3 cr.)
SPEA-M 547	Negotiation and Dispute Resolution for Public Affairs	(3 cr.)
SPEA-M 570	Public Labor Relations	(3 cr.)
SPEA-M 575	Comparative Public Management and Administration	(3 cr.)
SPEA-M 602	Strategic Management in Public and Nonprofit Organizations	(3 cr.)
SPEA-M 652	Managing Workforce Diversity in Public Organization	(3 cr.)
SPEA-M 654	Public Program Management and Contracting	(3 cr.)
SPEA-N 521	Nonprofit and Voluntary Sector	(3 cr.)
SPEA-N 523	Civil Society and Public Policy	(3 cr.)
SPEA-P 541	Benefit Cost Analysis	(3 cr.)
SPEA-P 562	Public Program Evaluation	(3 cr.)
SPEA-R 563	Corporate Sustainability in a Tri-Sectoral World	(3 cr.)
SPEA-S 515	Sustainable Communities	(3 cr.)

Nonprofit Management

(15 credit hours) The nonprofit management concentration equips students with the skills to effectively manage and lead nonprofit organizations through a local grounding in the legal structure and functions of nonprofits, and to apply the analytic and managerial tools that support effective nonprofit operation. Students may not use MPA core courses to fulfill concentration requirements.

Required Courses (6 credit hours)

SPEA-N 521	The Nonprofit and Voluntary Sector	(3 cr.)
SPEA-N 525	Management in the Nonprofit Sector	(3 cr.)

In consultation with a concentration advisor, select three courses (9 credit hours) from the following lists. At least 1 course must come from Group I (nonprofit management). Up to 3 courses may come from Group I (nonprofit management). Up to 2 courses may come from Group II (additional management skills). Only 1 course may come from Group III (nonprofit areas). Relevant substitutions may be made in Groups II and III with a faculty advisor's approval.

Electives (9 credit hours)

Elective Group I - Nonprofit Management: At least **1-3** nonprofit management courses may count toward the three electives.

SPEA-F 526	Financial Management for Nonprofit Organizations	(3 cr.)
SPEA-M 504	Public Organizations	(3 cr.)
SPEA-M 602	Strategic Management of Public and Nonprofit Organizations	(3 cr.)
SPEA-N 522	Human Resource Management in Nonprofit Organizations	(3 cr.)
SPEA-N 523	Civil Society and Public Policy	(3 cr.)
SPEA-N 524	Civil Society in Comparative Perspective	(3 cr.)
SPEA-N 534	NGO Management for International Development	(3 cr.)
SPEA-N 557	Proposal Development and Grant Administration	(3 cr.)
SPEA-N 558	Fund Development for Nonprofits	(3 cr.)
SPEA-V 559	Principles and Practices of Social Entrepreneurship	(3 cr.)
LAW-B 569	Nonprofit Organizations	(3 cr.)
LAW-B 761	Law and Philanthropy	(3 cr.)

Elective Group II - Additional Management Skills: In consultation with a concentration advisor, up to **two** additional management skills courses may count toward the three electives. Substitutions can be made with a faculty advisor's approval.

SPEA-I 515	Data Science for Public and	(3 cr.)

	Environmental Affairs	
SPEA-I 516	Public Management Information Systems	(3 cr.)
SPEA-M 547	Negotiation and Dispute Resolution for Public Affairs	(3 cr.)
SPEA-M 569	Managing Interpersonal Relations	(3 cr.)
SPEA-M 652	Managing Work Force Diversity in Public Organizations	(3 cr.)
SPEA-M 654	Public Program Management and Contracting	(3 cr.)
SPEA-M 662	Seminar in Accountability and Performance	(3 cr.)
SPEA-P 541	Benefit Cost Analysis	(3 cr.)
SPEA-P 562	Public Program Evaluation	(3 cr.)

Elective Group III - Nonprofit Areas: In consultation with a concentration advisor, **one** course in a nonprofit area may count toward the three electives.

AADM-Y 500	Cultural Districts and Local Arts Policy	(3 cr.)
AADM-Y 511	Performing Arts Center Management	(3 cr.)
AADM-Y 525	Museum Management	(3 cr.)
AADM-Y 559	Public Policy and the Arts	(3 cr.)
SPEA-D 573	Development Economics	(3 cr.)
SPEA-D 576	Approaches to Development	(3 cr.)
SPEA-D 577	International Economic Strategies and Trade Policy	(3 cr.)
SPEA-D 669	Economic Development, Globalization and Entrepreneurship	(3 cr.)
SPEA-H 549	Health Policy	(3 cr.)
SPEA-L 568	Management of Local Government Services	(3 cr.)
SPEA-L 622	Local Economic Development	(3 cr.)
SPEA-R 563	Corporate Sustainability in a Tri-Sectoral World	(3 cr.)
SPEA-S 515	Sustainable Communities	(3 cr.)

Policy Analysis

(15 credit hours) The Policy Analysis concentration combines an understanding of the policy process with the skills to create and consume accurate and actionable research and information designed to address public policy problems.

Concentration requirements emphasize the acquisition of quantitative and analytic skills that may be used to inform public policy decisions. The Policy Analysis field electives aim to provide students with additional skills used for policy analysis, and/or to provide students with the contextual knowledge needed to analyze policies in a substantive area. The electives change frequently, and often include topics courses as well as courses in a wide variety of policy areas: health, economic development, education, social policy transportation, energy, etc. In general, this substantive knowledge component requires more than one course in the same area. Consequently, it is important that the plan include *early* consultation with a concentration advisor.

Students may also acquire this substantive knowledge by combining the Policy Analysis concentration with other concentrations. For example, dual concentrations in Policy Analysis and Sustainable Development would prepare one to do work in sustainability with a more analytical approach. As in all concentrations, students may not use MPA Core courses to fulfill concentration requirements.

The following three courses are required (9 credit hours)

SPEA-P 507	Data Analysis and Modeling for Public Affairs	(3 cr.)
SPEA-P 541	Benefit Cost Analysis	(3 cr.)
SPEA-P 562	Public Program Evaluation	(3 cr.)

Electives: (6 credit hours) In consultation with a concentration advisor, select **two** courses from the list below:

AADM-Y 500	Cultural Districts and Local Arts Policy	(3 cr.)
AADM-Y 559	Public Policy and Arts	(3 cr.)
SPEA-D 573	Development Economics	(3 cr.)
SPEA-D 577	International Economic Strategies and Trade Policy	(3 cr.)
SPEA-D 583	Conflict and Development	(3 cr.)
SPEA-D 669	Economic Development, Globalization, and Entrepreneurship	(3 cr.)

SPEA-E 574	Energy Systems in Transition	(3 cr.)
SPEA-F 526	Financial Management for Nonprofit Organizations	(3 cr.)
SPEA-F 542	Governmental Financial Accounting and Reporting	(3 cr.)
SPEA-F 609	Seminar in Public Revenue Theory and Administration	(3 cr.)
SPEA-F 610	Government Budget and Program Analysis	(3 cr.)
SPEA-F 667	Seminar in Public Capital and Debt Theory	(3 cr.)
SPEA-H 524	Health Industry Regulation	(3 cr.)
SPEA-H 525	Health Economics for Policy and Management	(3 cr.)
SPEA-H 526	Healthcare Finance	(3 cr.)
SPEA-H 549	Health Policy	(3 cr.)
SPEA-I 515	Data Science for Public and Environmental Affairs	(3 cr.)
SPEA-L 568	Management of Local Government Services	(3 cr.)
SPEA-L 622	Local Economic Development	(3 cr.)
SPEA-M 547	Negotiation and Dispute Resolution for Public Affairs	(3 cr.)
SPEA-N 521	The Nonprofit and Voluntary Sector	(3 cr.)
SPEA-N 523	Civil Society and Public Policy	(3 cr.)
SPEA-N 557	Proposal Development and Grant Management	(3 cr.)
SPEA-P 539	Management Science for Public Affairs	(3 cr.)
SPEA-R 535	International Environmental Policy	(3 cr.)
SPEA-R 564	Environmental and Natural Resource Policy Design and Implementation	(3 cr.)
SPEA-R 625	Environmental Economics and Policy	(3 cr.)
SPEA-R 626	Energy Policy Seminar	(3 cr.)
SPEA-R 643	Natural Resource Management and Policy	(3 cr.)
SPEA-R 645	Environmental Law	(3 cr.)
SPEA-R 674	Energy, Economics and Policy	(3 cr.)
SPEA-V 550	Poverty and Social Welfare Policy	(3 cr.)
SPEA-V 559	Principles and Practices of Social Entrepreneurship	(3 cr.)
SPEA-V 640	Law, Public Management, and Public Policy	(3 cr.)
SPEA-X 511/E 501	Human Behavior and Energy Consumption	(3 cr.)

Public Financial Administration

(15 credit hours) The Public Financial Administration concentration develops technical skills necessary for budget analysis, preparation, and operation; analysis and application of tax policy; and public financial planning. Students may not use MPA core courses to fulfill concentration requirements.

Required Courses (9 credit hours)

Group I: In consultation with a concentration advisor, select **at least three** of the following courses:

SPEA-F 609	Seminar in Revenue Theory and Administration	(3 cr.)
SPEA-F 610	Government Budget and Program Analysis	(3 cr.)
SPEA-F 667	Seminar in Public Capital and Debt Theory	(3 cr.)
SPEA-P 562	Public Program Evaluation	(3 cr.)

NOTE: Should the student decide to take all four courses, the fourth course can be counted as one of the two required Group II electives.

Electives (6 credit hours)

Group II - In consultation with a concentration advisor, select **one** of the following courses:

SPEA-F 542	Governmental Financial Accounting and Reporting	(3 cr.)
SPEA-P 541	Benefit Cost Analysis	(3 cr.)

NOTE: Should the student decide to take both courses, the second course can be counted as one of the two electives required below.

Group III – In consultation with a concentration advisor, select **one** of the following courses or other graduate courses approved as equivalent substitutions (any student

that takes 15 credits from Groups I and II does not need to take a course from Group III).

SPEA-F 542	Governmental Financial Accounting and Reporting	(3 cr.)
SPEA-F 766	Public Revenue	(3 cr.)
SPEA-H 526	Healthcare Finance	(3 cr.)
SPEA-I 516	Public Management Information Systems	(3 cr.)
SPEA-P 507	Data Analysis and Modeling for Public Affairs	(3 cr.)
SPEA-P 541	Benefit Cost Analysis	(3 cr.)
SPEA-P 562	Public Program Evaluation	(3 cr.)

Public Management

(15 credit hours) The public management concentration is designed to teach students to manage and lead using the knowledge, systems, skills, and tools necessary to effectively pursue the missions of public organizations. Upon completing the concentration requirements, students will understand the political, legal, and social context in which public policies are adopted, implemented and evaluated; the role of public bureaucracy in a democratic society; the goals, structures, processes and behavior observed within public organizations; and the core administrative functions performed by public managers and employees. Students may not use MPA core courses to fulfill concentration requirements.

Required Courses (9 credit hours)

In consultation with a concentration advisor, select **at least three** of the following courses. Students taking more than three of these classes may substitute the additional courses taken from this list for an elective (see below).

SPEA-M 561	Public Human Resource Management	(3 cr.)
SPEA-M 602	Strategic Management of Public and Nonprofit Organizations	(3 cr.)
SPEA-M 654	Public Program Management and Contracting	(3 cr.)
SPEA-M 662	Seminar in Accountability and Performance	(3 cr.)
SPEA-P 562	Public Program Evaluation	(3 cr.)

Electives (6 credit hours)

In consultation with a concentration advisor, select **two** of the following courses:

SPEA-F 610	Government Budget and Program Analysis	(3 cr.)
SPEA-I 515	Data Science for Public and Environmental Affairs	(3 cr.)
SPEA-I 516	Public Management Information Systems	(3 cr.)
SPEA-L 568	Management of Local Government Services	(3 cr.)
SPEA-M 518	Intergovernmental Systems Management	(3 cr.)
SPEA-M 547	Negotiation and Dispute Resolution for Public Affairs	(3 cr.)
SPEA-M 570	Public Sector Labor Relations	(3 cr.)
SPEA-M 575	Comparative Public Management and Administration	(3 cr.)
SPEA-M 652	Managing Workforce Diversity	(3 cr.)
SPEA-P 541	Benefit Cost Analysis	(3 cr.)
SPEA-R 563	Corporate Sustainability in a Tri-Sectoral World	(3 cr.)
SPEA-R 564	Environmental and Natural Resource Policy Design and Implementation	(3 cr.)
SPEA-V 550	Latino American Goverance	(3 cr.)
SPEA-V 640	Law, Public Management, and Public Policy	(3 cr.)

Sustainability and Sustainable Development

(15 credit hours) In the sustainability and sustainable development concentration students study the relations among productive activity and social and environmental impacts. They consider the role of markets and related institutions in the efficient and equitable delivery of goods and services, and develop skills to analyze and address the systematic strengths and weaknesses in the various social systems. Students examine the many factors, including social, economic, legal and political forces that promote or deter sustainability. The concentration encourages students to examine the interrelationship of environmental and social systems, the regenerative capacity of both, and the institutional change that will be required to develop greater sustainability. Graduates will be prepared for employment in government and international programs, corporate sustainability offices, and not-for-profit sustainability campaigns. Students

may not use MPA core courses to fulfill concentration requirements.

Required Courses (3 credit hours)
In consultation with a concentration advisor, choose **one** of the following three courses:

SPEA-R 563	Corporate Sustainability in a Tri-Sectoral World	(3 cr.)
SPEA-S 515	Sustainable Communities	(3 cr.)
SPEA-S 596	Sustainable Development	(3 cr.)

Electives (12 credit hours)
Group I - Context for Sustainability (6 credit hours):
In consultation with a concentration advisor, select **two** courses from **one** of the following areas:

- Development, Policy and Entrepreneurship
- Natural Environment
- Environmental Protection

Students are encouraged to select courses that lead to expertise in a particular context. (Note: The three courses listed in Requirements may also be taken as Electives. However, they cannot be double counted. Students taking more than one of the three Requirements courses, will receive 3 credits towards Requirements for the first of those courses, and then the second and third would count towards electives.).

Development, Policy and Entrepreneurship:

SPEA-D 576	Approaches to Development	(3 cr.)
SPEA-D 669	Economic Development, Globalization, and Entrepreneurship	(3 cr.)
SPEA-E 530	Fundamentals of Sustainable Agriculture	(3 cr.)
SPEA-L 622	Local Economic Development	(3 cr.)
SPEA-R 512	Energy and Climate: Law and Policy	(3 cr.)
SPEA-R 516	Sustainable Agriculture and Environmental Governance	(3 cr.)
SPEA-R 517	Environmental Justice	(3 cr.)
SPEA-R 532	Water Policy and Economics	(3 cr.)
SPEA-R 535	International Environmental Policy	(3 cr.)
SPEA-R 643	Natural Resource Management and Policy	(3 cr.)
SPEA-R 625	Environmental Economics and Policy	(3 cr.)
SPEA-R 643	Natural Resource Management and Policy	(3 cr.)
SPEA-R 674	Energy Economics and Policy	(3 cr.)
SPEA-S 515	Sustainable Communities	(3 cr.)
SPEA-S 596	Sustainable Development	(3 cr.)
SPEA-V 527	Urban Sustainability *(This course is offered at IUPUI)*	(3 cr.)
SPEA-V 550	Food Policy in a Changing World	(3 cr.)
SPEA-V 559	Principles and Practices of Social Entrepreneurship	(3 cr.)
SPEA-X 511/ SPEA-E 501	Human Behavior and Energy Consumption	(3 cr.)

Natural Environment:

SPEA-E 517	BMP Design for Healthy Urban Watersheds	(3 cr.)
SPEA-E 522	Urban Forest Management	(3 cr.)
SPEA-E 528	Forest Ecology and Management	(3 cr.)
SPEA-E 534	Restoration Ecology	(3 cr.)
SPEA-E 540	Wetlands Ecology and Management	(4 cr.)
SPEA-E 545	Lake and Watershed Management	(3 cr.)
SPEA-E 555	Sustaining Urban Ecosystems	(3 cr.)
SPEA-E 557	Conservation Biology	(3 cr.)
SPEA-E 563	Wildlife Management	(3 cr.)
SPEA-E 591/R 591	Climate Change Impacts on Natural Resources	(3 cr.)

Environmental Protection:

SPEA-E 515	Fundamentals of Air Pollution	(3 cr.)
SPEA-E 539	Aquatic Chemistry	(3 cr.)
SPEA-E 552	Environmental Engineering	(3 cr.)
SPEA-E 562	Solid and Hazardous Waste Management	(3 cr.)
SPEA-E 564	Organic Pollutants	(3 cr.)
SPEA-E 574	Energy Systems in Transition	(3 cr.)

Group II - Analytical Tools (6 credit hours):

In consultation with a concentration advisor, select **two** of the following courses or other graduate courses approved as equivalent substitutions:

SPEA-E 511	Sustainability Assessment	(3 cr.)
SPEA-E 518	Vector-Based Geographic Information Systems	(3 cr.)
SPEA-E 529	Application of Geographical Information Systems	(3 cr.)
SPEA-M 547	Negotiation and Alternative Dispute Resolution for Public Affairs	(3 cr.)
SPEA-P 507	Data Analysis & Modeling for Public Affairs	(3 cr.)
SPEA-P 541	Benefit Cost Analysis	(3 cr.)
SPEA-P 562	Public Program Evaluation	(3 cr.)

Specialized

(15 credit hours) A student, whose educational and professional goals are not satisfied by O'Neill's concentrations, may design a Specialized Concentration that best suits his or her needs in consultation with a faculty advisor with final approval required by the relevant faculty program director(s). **The student, the student's advisor, and the appropriate Faculty Program Director must sign a Specialized Concentration Form that specifies the courses that will comprise the customized concentration.** This form is available the Forms section of the Current Student Portal. The completed Specialized Concentration Form must be submitted *prior* to enrolling in the courses outlined. **Students are strongly encouraged to declare their concentration within the first 24 credit hours of the student's academic program.**

MPA specialized concentrations consist of a minimum of 15 credit hours.

Although no specific guidelines exist for the courses to be included in a Specialized Concentration, students must take O'Neill courses unless approved by a faculty advisor(s) and the appropriate Faculty Program Director(s). Students must name their Specialized Concentration. However, these names will not appear on their IU transcript. Instead, after "Major" the words "Specialized Study" will appear.

Online Master of Public Affairs

All online M.P.A. students will complete the public affairs concentration (15 credit hours).

Courses should be selected in conjunction with the faculty program director and/or academic advisor.

Master of Public Affairs Dual Degree Programs

Master of Public Affairs-Master of International Affairs (M.P.A.-M.I.A.)

Master of Public Affairs–Master of Science in Environmental Science (M.P.A.–M.S.E.S.)

Master of Public Affairs–Doctor of Jurisprudence (M.P.A.–J.D.)

Master of Public Affairs - Master of Science in Cybersecurity Risk Management (M.P.A.-M.S.)

Master of Public Affairs-Master of Arts in Arts Administration (M.P.A.-M.A.A.A.)

Other Dual M.P.A. Degree Programs

Other Dual M.P.A. International Degree Programs

Master of Public Affairs–Master of Science in Environmental Science

This combined master's program is a 60-credit hour program that gives the student more depth and breadth than is possible in a single degree. M.P.A. and M.S.E.S. degrees are awarded concurrently after the student has completed the requirements for both degrees.

Application and Admission

The student must apply to and be accepted by both the Master of Public Affairs program and the Master of Science in Environmental Science program. The normal criteria for admission to each program apply.

Program Requirements

(60 credit hours) The combined M.P.A.–M.S.E.S. program requires a minimum of 60 credit hours distributed among four components: environmental science core, public affairs core, environmental science and policy concentration, and professional experience.

Public Affairs Core

Required Courses (18 credit hours)

SPEA-E 538	Statistics for Environmental Science	(3 cr.)
SPEA-E 543	Environmental Management	(3 cr.)
SPEA-V 512 **OR** SPEA-V 538	Public Policy Process **OR** Comparative and International Policy Process	(3 cr.)
SPEA-V 517	Public Management Economics	(3 cr.)
SPEA-V 532	Social Equity and Justice in Public Affairs	(1.5 cr.)
SPEA-V 536	Rights and Responsibilities: How Law Shapes Public Affairs	(1.5 cr.)

SPEA-V 537	Designing and Managing Complex Projects	(1.5 cr.)
SPEA-V 548	Evidence-Based Decision Making	(1.5 cr.)

Environmental Science Core Competencies

Each student should demonstrate a competency in the following areas of environmental science: mathematics, statistics, chemistry, engineering principles, and ecology. The selection of courses may vary according to the students background. Some or all of the following course categories may be appropriate to be determined in consultation with the gatekeepers for each course category.

Required Courses (12 credit hours)

SPEA-E 526	Applied Mathematics for Environmental Science	(3 cr.)
SPEA-E 527	Applied Ecology	(3 cr.)
SPEA-E 536	Environmental Chemistry	(3 cr.)
SPEA-E 552	Environmental Engineering	(3 cr.)

Capstone (3 credit hours)

Choose one of the following courses:

SPEA-E 517	BMP Design for Healthy Urban Watersheds	(3 cr.)
SPEA-E 546	Stream Ecology	(3 cr.)
SPEA-E 560	Environmental Risk Analysis	(3 cr.)
SPEA-V 600	Capstone in Public and Environmental Affairs	(3 cr.)

Program Options

Dual degree students can pursue one of six concentration options.

1. Energy and Climate Change Solutions Concentration (24 credit hours)

Required Courses (9 credit hours)

The following **three** courses are required:

SPEA-E 574	Energy Systems in Transition	(3 cr.)
SPEA-E 591	Climate-Change Impacts on Natural Resources	(3 cr.)
SPEA-R 674	Energy Economics and Policy	(3 cr.)

Electives (15 credit hours)

Students seek a mixture of science and policy courses related to energy in accordance to professional goals. No double counting with program core courses is permitted. At least **two** courses must be taken from **each** group.

Students interested in including other, related courses may substitute with permission of a concentration advisor.

Group I - Natural Science Electives (6-9 credit hours):

SPEA-E 505	Renewable and Nuclear Energy and Climate Change	(3 cr.)
SPEA-E 515	Fundamentals of Air Pollution	(3 cr.)
EAS-G 534	Dynamic Meteorology: Synoptic to Global Scale	(3 cr.)
EAS-G 537	Synoptic Meteorology and Climatology	(3 cr.)
EAS-G 540	Physical Meteorology, Climate, and Paleoclimate	(3 cr.)
EAS-G 556	Wind Power Meteorology	(3 cr.)
EAS-G 576	Climate Change	(3 cr.)
GEOG-G 532	Physical Climatology	(3 cr.)
GEOG-G 544	Climate Change Impacts	(3 cr.)

Group II - Economics, Public Policy and Law Elective (6-9 credit hours):

SPEA-E 501/ SPEA-X 511	Human Behavior and Energy Consumption	(3 cr.)
SPEA-P 541	Benefit Cost Analysis	(3 cr.)
SPEA-P 562	Public Program Evaluation	(3 cr.)
SPEA-R 512/ LAW-L 660	Energy and Climate: Law and Policy	(3 cr.)
SPEA-R 521	Domestic Environmental Policy	(3 cr.)
SPEA-R 532	Water Policy and Economics	(3 cr.)
SPEA-R 533	Public Natural Resources Law	(3 cr.)
SPEA-R 535	International Environmental Policy	(3 cr.)
SPEA-R 563	Corporate Sustainability in a Tri-Sectoral World	(3 cr.)
SPEA-R 564	Environmental and Natural Resource Policy Design and Implementation	(3 cr.)
SPEA-R 625	Environmental Economics and Policy	(3 cr.)

SPEA-R 626	Energy Justice and PolicySeminar	(3 cr.)
SPEA-R 643	Natural Resource Management and Policy	(3 cr.)
SPEA-R 645	Environmental Law	(3 cr.)
SPEA-S 516	Preparing for Climate Change and Resilient Urban Communities	(3 cr.)
SPEA-S 596	Sustainable Development	(3 cr.)
SPEA-V 550/ LAW-B 644	Energy Law and Policy	(3 cr.)
INTL-I 525	International Climate Governance	(3 cr.)
MSCH-T 602	Communicating Climate Change	(3 cr.)

2. Environmental Management Concentration (24 credit hours)

Required Courses (12 credit hours)

In consultation with an advisor, choose four of the following courses:

SPEA-E 515	Fundamentals of Air Pollution	(3 cr.)
SPEA-E 516	Fisheries Management	(3 cr.)
SPEA-E 520	Environmental Toxicology	(3 cr.)
SPEA-E 528	Forest Ecology and Management	(3 cr.)
SPEA-E 530	Fundamentals of Sustainable Agriculture	(3 cr.)
SPEA-E 539	Aquatic Chemistry	(3 cr.)
SPEA-E 540	Wetlands Ecology and Management	(4 cr.)
SPEA-E 542	Hazardous Materials	(3 cr.)
SPEA-E 550	Soil Science and Management	(3 cr.)
SPEA-E 545	Lake and Watershed Management	(3 cr.)
SPEA-E 562	Solid and Hazardous Waste Management	(3 cr.)
SPEA-E 563	Wildlife Management	(3 cr.)

Electives (12 credit hours)

In consultation with an advisor, choose four of the following, including at least two law/management/policy-focused electives. Required courses from the first part of this concentration may also be used as Science-Focused Electives.

Group 1 - Science-Focused Electives:

SPEA-E 514	Changing Landscape of Toxic Chemical Regulations	(3 cr.)
SPEA-E 534	Restoration Ecology	(3 cr.)
SPEA-E 554	Groundwater Flow Modeling	(3 cr.)
SPEA-E 555	Conservation Planning	(3 cr.)
SPEA-E 557	Conservation Biology	(3 cr.)
SPEA-E 564	Organic Pollutants: Environmental Chemistry & Fate	(3 cr.)
SPEA-E 574	Energy Systems in Transition	(3 cr.)
SPEA-E 591	Climate Change Impacts on Natural Resources	(3 cr.)

Group II - Law, Management, and Policy-Focused Electives:

SPEA-E 512	Risk Communication	(3 cr.)
SPEA-R 512	Energy and Climate: Law and Policy	(3 cr.)
SPEA-R 513	Wildlife Law	(3 cr.)
SPEA-R 516	Sustainable Agriculture and Environmental Governance	(3 cr.)
SPEA-R 521	Domestic Environmental Policy	(3 cr.)
SPEA-R 531	Water Law	(3 cr.)
SPEA-R 532	Water Policy and Economics	(3 cr.)
SPEA-R 533	Public Natural Resource Law	(3 cr.)
SPEA-R 563	Corporate Sustainability in a Tri-Sectoral World	(3 cr.)
SPEA-R 564	Environmental and Natural Resource Policy Design and Implementation	(3 cr.)
SPEA-R 625	Environmental Economics and Policy	(3 cr.)
SPEA-R 643	Natural Resource Management and Policy	(3 cr.)
SPEA-R 645	Environmental Law	(3 cr.)
SPEA-R 674	Energy Economics and Policy	(3 cr.)
SPEA-S 516	Preparing for Climate	(3 cr.)

	Change and Resilient Urban Communities	
SPEA-V 550	Food Policy in a Changing World	(3 cr.)

Group III - Tools Electives:

SPEA-E 518	Vector-Based Geographic Information Systems	(3 cr.)
SPEA-E 529	Application of Geographic Information Systems	(3 cr.)
SPEA-E 555	Intro to Coding for Environment and Policy	(1 cr.)
SPEA-E 555	Python Programming for Environment and Policy	(1 cr.)
SPEA-E 555	Using R for Environment and Policy	(1 cr.)
SPEA-E 560	Risk Analysis	(3 cr.)
SPEA-I 516	Public Management Information Systems	(3 cr.)
SPEA-M 547	Negotiation and Dispute Resolution for Public Affairs	(3 cr.)
SPEA-M 654	Public Program Management and Contracting	(3 cr.)
SPEA-P 507	Data Analysis and Modeling for Public Affairs	(3 cr.)
SPEA-P 541	Benefit Cost Analysis	(3 cr.)
SPEA-P 562	Public Program Evaluation	(3 cr.)

3. Environmental Systems Analysis and Modeling Concentration
(24 credit hours)
Required Courses (6 credit hours)

The following two courses:

SPEA-E 560	Environmental Risk Analysis	(3 cr.)
SPEA-P 507	Data Analysis and Modeling for Public Affairs	(3 cr.)

Electives (18 credit hours)

In consultation with a concentration advisor, select a total of **six** courses, including at least **two** courses from the Science section and **two** courses from the Policy and Administration section.

Group I - Science Electives (choose at least two of the following courses):

SPEA-E 515	Fundamentals of Air Pollution Control	(3 cr.)
SPEA-E 539	Aquatic Chemistry	(3 cr.)
SPEA-E 554	Groundwater Flow Modeling	(3 cr.)
SPEA-E 564	Organic Pollutants: Environmental Chemistry and Fate	(3 cr.)

Group II - Policy and Administration Electives (choose at least two of the following courses):

SPEA-P 541	Benefit Cost Analysis	(3 cr.)
SPEA-P 562	Public Program Evaluation	(3 cr.)
SPEA-R 625	Environmental Economics and Policy	(3 cr.)
SPEA-R 674	Energy Economics and Policy	(3 cr.)

Group III – Tools and Methods Electives:

SPEA-E 518	Vector-based Geographic Information Systems	(3 cr.)
SPEA-E 529	Application of Geographic Information Systems	(3 cr.)
SPEA-E 555/V550	Intro to Coding for Environment and Policy	(1 cr.)
SPEA-E 555/V550	Python Programming for Environment and Policy	(1 cr.)
SPEA-E 555/V550	Using R for Environment and Policy	(1 cr.)
SPEA-P 539	Management Science for Public Affairs	(3 cr)
GEOG-G 588	Applied Spatial Statistics	(3 cr.)

4. Food and Farming Sustainability Concentration
(24 credit hours)
Core Natural Sciences (6 credit hours)

SPEA-E 530	Fundamentals of Sustainable Agriculture	(3 cr.)
SPEA-E 550	Soil Science and Management	(3 cr.)

Core Social Science, Policy, and Governance (6 credit hours)

Choose two of the following courses:

SPEA-R 516	Agriculture, Environment, and Governance	(3 cr.)
SPEA-R 519	Food Systems and Community Resilience	(3 cr.)
SPEA-V 550	Food Policy in a Changing World	(3 cr.)

Electives (12 credit hours)

Choose four courses from this list or courses not used to satisfy concentration core requirements from the above lists. Additional courses possible with approval of an advisor.

SPEA-E 518	Vector-Based Geographic Information Systems	(3 cr.)
SPEA-E 520	Environmental Toxicology	(3 cr.)
SPEA-E 528	Forest Ecology and Management	(3 cr.)
SPEA-E 539	Aquatic Chemistry	(3 cr.)
SPEA-E 540	Wetland Ecology and Management	(4 cr.)
SPEA-E 545	Lake and Watershed Management	(3 cr.)
SPEA-E 560	Environmental Risk Analysis	(3 cr.)
SPEA-E 591	Climate Change Impacts on Natural Resources	(3 cr.)
SPEA-N 521	Nonprofit and Voluntary Sector	(3 cr.)
SPEA-N 557	Proposal Development and Grant Administration	(3 cr.)
SPEA-P 541	Benefit Cost Analysis	(3 cr.)
SPEA-P 562	Public Program Evaluation	(3 cr.)
SPEA-R 532	Water Policy and Economics	(3 cr.)
ANTH-B 545	Nutritional Anthropology	(3 cr.)
BUS-P 601	Supply Chain and Distribution	(3 cr.)
GEOG-G 558	Food and Poverty in America	(3 cr.)
GEOG-G 567	Ecohydrology	(3 cr.)
GEOG-G 578	Global Change, Food, and Farming Systems	(3 cr.)
INFO-I 516	Informatics in Disasters and Emergency Response	(3 cr.)
NTRD-N 500	Nutrition I (IUPUI course offering)	(3 cr.)
SPH-N 536	Applied Public Health Nutrition	(3 cr.)

5. Water Management Concentration (24-25 credit hours)

Required Courses (10 credit hours)

SPEA-E 556	Limnology	(4 cr.)
SPEA-R 531	Water Law	(3 cr.)
or		
SPEA-R 532	Water Policy and Economics	(3 cr.)
	One physical science class from the list below	(3 cr.)

Water Science (6 - 9 credit hours without overlap with courses used for requirements)

Physical Sciences:

SPEA-E 539	Aquatic Chemistry	(3 cr.)
SPEA-E 554	Groundwater Flow Modeling	(3 cr.)
***GEOG-G 551**	Physical Hydrology	(3 cr.)

Ecology and Management:

SPEA-E 504	Sustainable River Management	(3 cr.)
SPEA-E 517	BMP Design for Healthy Urban Watersheds	(3 cr.)
SPEA-E 540	Wetlands Ecology and Management	(4 cr.)
SPEA-E 545	Lake and Watershed Management	(3 cr.)
SPEA-E 546	Stream Ecology	(3 cr.)
SPEA-E 550	Soil Science and Management	(3 cr.)

Policy and Administration (6-9 credit hours without overlap with courses used for requirements)

SPEA-P 541	Benefit Cost Analysis	(3 cr.)
SPEA-P 562	Public Program Evaluation	(3 cr.)
SPEA-R 512	Energy and Climate: Law and Policy	(3 cr.)
SPEA-R 521	Domestic Environmental Policy	(3 cr.)
SPEA-R 531	Water Law	(3 cr.)
SPEA-R 532	Water Policy and Economics	(3 cr.)

SPEA-R 563	Corporate Sustainability in a Tri-Sectoral World	(3 cr.)
SPEA-R 564	Environmental and Natural Resource Policy Design and Implementation	(3 cr.)
SPEA-R 625	Environmental Economics and Policy	(3 cr.)
SPEA-R 643	Natural Resource Management and Policy	(3 cr.)
SPEA-R 645	Environmental Law	(3 cr.)
SPEA-X 511	Human Behavior and Energy Consumption	(3 cr.)
*GEOG-G 553	Water and Society	(3 cr.)

6. Specialized Concentration

(24 credit hours)

A student, whose educational and professional goals are not satisfied by O'Neill's concentrations, may design a Specialized Concentration that best suits his or her needs in consultation with a faculty advisor with final approval required by the relevant faculty program director(s). The student, the student's advisor, and the appropriate Faculty Program Director must sign a Specialized Concentration Form that specifies the courses that will comprise the customized concentration. This form is available in the Forms section of the Current Student Portal. The completed Specialized Concentration Form must be submitted prior to enrolling in the courses outlined. **Students are strongly encouraged to declare their concentration within the first 24 credit hours of the student's academic program.**

Dual MPA-MSES specialized concentrations consist of a minimum of 24 credit hours. Specialized concentrations associated with other dual degrees vary in credit hour requirements. See specific guidelines associated with the respective degree design.

Although no specific guidelines exist for the courses to be included in a Specialized Concentration, students should include a balance of MPA and MSES concentration courses, typically with at least 3 courses from each side. At least two MSES concentration courses must be focused on science content. MSES concentration courses beyond the minimum of two science-focused courses may include tools/methods courses such as E512 Risk Communication, E518 Vector-based GIS, E529 Applications of GIS, E555 Conservation Planning and E555 coding courses. Specialized MPA-MSES concentrations should consist of O'Neill courses unless approved by a faculty advisor(s) and the appropriate Faculty Program Director(s). Students must name their Specialized Concentration. However, these names will not appear on their IU transcript. Instead, after "Major" the words "Specialized Study" will appear.

7. Any M.S.E.S. or M.P.A. Concentration

Any M.S.E.S. concentration plus 9 additional credit hours from MPA concentration courses outside of the E series of SPEA courses, with the exception of E535 International Environmental Policy, which will be an acceptable course.

Or

Any M.P.A. concentration plus 9 additional credit hours from the M.S.E.S. tools and concentration courses in the E series of SPEA courses (excluding E535 International Environmental Policy).

For students taking the Environmental Science concentration (the "half concentration" of 4 ES concentration courses that is used by dual students completing a full MPA concentration), limit science-side credits to two non-science-content courses (coding, GIS, planning, communication) except with permission of the program director, to guarantee content strength in the "half" concentration.

Experiential Requirement

Each MPA-MSES student must obtain professionally relevant experience through one of the following options: an approved internship (includes research internships) (SPEA-V 585 or SPEA-E 589; 0-6 credit hours), completion of the MSES thesis concentration, or the award of prior professional experience credit. Students are encouraged to discuss with faculty members the relative merits of their experience opportunities, according to individual career objectives.

Master of Public Affairs–Doctor of Jurisprudence

The combined Master of Public Affairs–Doctor of Jurisprudence program enables the student to take a four-year sequence of courses leading to both degrees.

Application and Admission

The applicant must have a bachelor's degree from an accredited institution of higher education and must apply separately to both the Maurer School of Law and the O'Neill School of Public and Environmental Affairs.

If the applicant is admitted to only one school, the applicant is permitted to attend that school and is, of course, required to meet the graduation requirements of that school. It is recommended that the student apply to both schools simultaneously for the combined M.P.A.–J.D. program. It is possible, however, for a person already enrolled in the Maurer School of Law to apply for admission to the O'Neill School of Public and Environmental Affairs up to the end of the second year of law study. It is also possible for a student enrolled in the O'Neill School of Public and Environmental Affairs to seek admission to the Maurer School of Law up to the end of the first year of the M.P.A. course of study.

Academic Standing

Grade point averages in the Maurer School of Law and the O'Neill School of Public and Environmental Affairs are computed separately. To continue in the program, the student must meet the academic standards in each school. A student failing in one school but meeting academic standards in the other may complete work for the degree in the school in which the student is able to meet the academic standards. Such completion must be according to the same conditions (credit hours, residency, etc.) required of regular (noncombination) degree candidates; that is, 82 credit hours in law and 48 credit hours in SPEA.

School Residency

Students in the dual M.P.A.–J.D. program should enroll in courses through the O'Neill School of Public and Environmental Affairs in the first year of the program and through the Maurer School of Law in the second year of the program. Alternatively, dual M.P.A.–J.D. students do have the option of enrolling in courses through the School of Law—Bloomington in the first year and in O'Neill in the second year. In the third and fourth years, or until the program is completed, students should enroll through the school in which the majority of their credit hours reside in each enrollment period.

Program Requirements

(115 credit hours)

Master of Public Affairs Requirements

(36 credit hours) Students are required to complete 36 credit hours of O'Neill courses distributed among the M.P.A. core and a specialization area.

Required Courses (21 credit hours)

	SPEA-F 560	Public Finance and Budgeting	(3 cr.)
	SPEA-V 506	Statistical Analysis for Effective Decision Making	(3 cr.)
	SPEA-V 512 **OR** V 538	Public Policy Process **OR** Comparative and International Policy Process	(3 cr.)
	SPEA-V 517	Public Management Economics	(3 cr.)
	SPEA-V 535	Managing and Leading in Public Affairs	(3 cr.)
	SPEA-V 537	Designing and Managing Complex Projects	(1.5 cr.)
	SPEA-V 548	Evidence-Based Decision Making	(1.5 cr.)
	SPEA-V 600	Capstone in Public and Environmental Affairs	(3 cr.)

Specialization Area (15 credit hours)

The student chooses a field of specialization and develops a program of specialization courses in consultation with a O'Neill faculty advisor.

Doctor of Jurisprudence Requirements

(79 credit hours) Students are required to complete 79 credit hours of law courses and to satisfy all requirements for the degree Doctor of Jurisprudence. For specific requirements, see the Maurer School of Law Bulletin.

Dual Master of Public Affairs and Master of Science in Cybersecurity Risk Management

The IU-Bloomington Cybersecurity Program and the O'Neill School of Public and Environmental Affairs offer a dual-degree program that qualifies students for a M.P.A./M.S. in Cybersecurity Risk Management. Study for the dual degree can be combined for a total of 51 credit hours instead of the 78 credit hours required for the two degrees taken separately. Neither degree will be awarded until the requirements for both degrees have been met. The M.P.A. requirements may be taken residentially or online.

Admissions Requirements

Requirements are the same as for the Master of Science degree except that students must also apply to the M.P.A. program at O'Neill and meet its established M.P.A. admissions criteria. Students must be accepted for admission to both units separately in order to be admitted to the program.

Cybersecurity M.S. Course Requirements (30 credit hours):

The M.S. in Cybersecurity Risk Management requires that students take six credits in law courses, six credits in business courses, six credits in informatics or computer science courses, nine credits from a list of elective courses (offered at Maurer, the Kelley School of Business, and the Luddy School of Informatics, Computing, and Engineering), and a three-credit Cybersecurity Risk Management Capstone course. In this combined degree, the Cybersecurity M.S. component uses both required MPA concentration courses and SPEA-V 536 to satisfy the required nine credits of electives.

At least 6 credit hours from Technical Cybersecurity courses offered at Luddy:

CSCI-A 538	Network Technologies and System Administration	(3 cr.)
CSCI-A 541	Computing & Technology Bootcamp I	(3 cr.)
CSCI-A 542	Technical Foundations of Cybersecurity	(3 cr.)
INFO-I 520	Security for Networked Systems	(3 cr.)
INFO-I 521	Malware: Threat & Defense	(3 cr.)
INFO-I 533	Systems and Protocol Security and Info. Assurance	(3 cr.)
INFO-I 537	Legal and Social Informatics of Security	(3 cr.)

INFO-I 538	Introduction to Cryptography	(3 cr.)

At least 6 credit hours from Information Technology Risk Management offered at Kelley:

BUEX-C 533	Data Warehousing & Visualization	(3 cr.)
BUEX-C 541	Enterprise Systems	(3 cr.)
BUKD-C 522	IT Technology for Managers	(3 cr.)
BUKD-C 548	Managing Intellectual Property in Global Business	(3 cr.)
BUKD-T 501	Big Data Technologies	(3 cr.)
BUKD-T 522	IT Architecture	(3 cr.)
BUKD-T 560	IT Risk Management	(3 cr.)
BUKD-T 578	Cybersecurity Law & Policy	(3 cr.)
BUKD-T 579	Information Systems Security	(3 cr.)

At least 6 credit hours from Cybersecurity Law and Policy offered at Maurer (with BUKD-T 578 offered at Kelley):

BUKD-T 578	Cybersecurity Law & Policy	(3 cr.)
LAW-B 536	Health Privacy Law	(2 cr.)
LAW-B 587	Information Security Law	(3 cr.)
LAW-B 708	Information Privacy Law I	(3 cr.)
LAW-B 728	Information Privacy Law II	(3 cr.)
LAW-B 738	Cybersecurity	(3 cr.)

Three credit hours in a Cybersecurity Risk Management Capstone:

BUS-L 589	Information Privacy Law I	(3 cr.)
GRAD-C 516	Information Privacy Law II	(3 cr.)

Note: Although a Cybersecurity course, this course may count towards an elective course for the specialized concentration for the MPA and will fulfill the experiential requirement. If a student wishes to pursue this route, this course will not count towards the M.S. part of the dual degree.

The MPA Component of the Dual M.P.A./Cybersecurity M.S. Degree (30 credit hours)

O'Neill School M.P.A. Core Requirements (21 credit hours):

SPEA-F 560	Public Finance and Budgeting	(3 cr.)
SPEA-V 506	Statistical Analysis for Effective Decision Making	(3 cr.)
SPEA-V 512 **OR** V 538	Public Policy Process **OR** Comparative and International Policy Process	(3 cr.)
SPEA-V 517	Public Management Economics	(3 cr.)
SPEA-V 532	Social Equity and Justice in Public Affairs	(1.5 cr.)
SPEA-V 535	Managing and Leading in Public Affairs	(3 cr.)
SPEA-V 536	Rights and Responsibilities: How Law Shapes Public Affairs	(1.5 cr.)
SPEA-V 537	Designing and Managing Complex Projects	(1.5 cr.)
SPEA-V 548	Evidence-Based Decision Making	(1.5 cr.)

***Note:** Extremely well-prepared applicants may petition the program director to waive one or more of the core requirements on the basis of advanced course work done elsewhere. Students may be exempted on the basis of satisfactory equivalent course work or by examination. Credit hours waived from the core add to the electives a student may use. Students requesting course waivers should contact the appropriate graduate program director for requirements and guidelines.

Specialized Concentration (9 credit hours):

SPEA-E 518	Vector-Based Geographic Information Systems	(3 cr.)
SPEA-E 529	Application of Geographic Information Systems	(3 cr.)
SPEA-I 515	Data Science for Public and Environmental Affairs	(3 cr.)
SPEA-I 516	Public Management Information Systems	(3 cr.)
SPEA-I 519	Database Management Systems	(3 cr.)
SPEA-P 507	Data Analysis and Modeling for Public Affairs	(3 cr.)

SPEA-P 539	Management Science for Public Affairs	(3 cr.)

MPA Experiential Component (0 credit hours):
Each candidate for the MPA degree must obtain professionally relevant experience through one of the following options.

- **Internship** – Students who wish to complete an internship must seek counsel in the Career Hub (SPEA 200 or oneillcareerhub.indiana.edu) before it begins. The Career Hub will provide details concerning eligibility, procedures, and required paperwork.
  - **Internship with course credit (0-3 credit hours)** - The MPA experiential component is commonly fulfilled by completing an internship, which must be registered through the O'Neill Career Hub for 0 credit hours (SPEA-V 585). However, MPA-MS Cybersecurity Risk Management students may choose take GRAD-C 516 IU Cybersecurity Clinic (3 credit hours, online) instead. Although a Cybersecurity course, this course may count as an elective course for the MPA specialized concentration and will fulfill the experiential requirement. If a student wishes to pursue this route, this course will not count towards the MS requirements for the dual degree.

Master of Public Affairs–Master of Arts in Arts Administration

Students pursuing a dual Master of Public Affairs / Master of Arts in Arts Administration will complete the core requirements of the MPA, and the MAAA. When combined with an MPA concentration, the MAAA management and policy courses, and experiential learning requirements, students will take a total of 63 credit hours (with at least 21 credit hours taken in each program), which would ordinarily be completed with five semesters of course work plus an internship.

Application and Admission

The student must apply to and be accepted by both the Master of Public Affairs program and the Master of Arts Administration program. The normal criteria for admission to each program apply.

Requirement I: MPA Core (15 credit hours)

SPEA-V 506	Statistical Analysis for Effective Decision Making	(3 cr.)
SPEA-V 517	Public Management Economics	(3 cr.)
SPEA-V 532	Social Equity and Justice in Public Affairs	(1.5 cr.)
SPEA-V 536	Rights and Responsibilities: How Law Shapes Public Affairs	(1.5 cr.)
SPEA-V 537	Designing and Managing Complex Projects	(1.5 cr.)
SPEA-V 548	Evidence-Based Decision Making	(1.5 cr.)

Policy Process (3 credit hours)

Choose one of the following

SPEA-V 512	Public Policy Process	(3 cr.)
OR		
SPEA-V 538	Comparative and International Policy Process	(3 cr.)

***Note:** Extremely well-prepared applicants may petition the program director to waive one or more of the core requirements on the basis of advanced course work done elsewhere. Students may be exempted on the basis of satisfactory equivalent course work or by examination. Credit hours waived from the core add to the electives a student may use. Students requesting course waivers should contact the appropriate graduate program director for requirements and guidelines.

Requirement II: MAAA Core (18 credit hours)

AADM-Y 502	Introduction to Arts Administration and Organizational Behavior	(3 cr.)
AADM-Y 530	Audience Development and Marketing the Arts	(3 cr.)
AADM-Y 558	Fund Development for Nonprofit Organizations	(3 cr.)
AADM-Y 562	Legal Issues in the Arts	(3 cr.)
AADM-Y 650	Seminar in Arts Administration	(3 cr.)

Financial Management (3 credit hours)

Choose one of the following

AADM-Y 515	Financial Management for the Arts	(3 cr.)
SPEA-F 526	Financial Management for Nonprofit Organizations	(3 cr.)
SPEA-F 560	Public Finance and Budgeting	(3 cr.)

MAAA Management and Policy (15 credits hours)

Area I: Performing Arts

Choose one of the following

AADM-Y 508	Managing Performing Arts Organizations	(3 cr.)

AADM-Y 511	Performing Arts Center Management	(3 cr.)

Area II: Visual Arts

Choose one of the following

AADM-Y 506	Curating for Museums and Galleries	(3 cr.)
AADM-Y 525	Museum Management	(3 cr.)

Area III: Arts and Cultural Policy

Choose one of the following

AADM-Y 551	Cultural Planning and Urban Development	(3 cr.)
AADM-Y 559	Public Policy in the Arts	(3 cr.)

Area IV: Technology Management

Choose one of the following

AADM-Y 500	Digital Literacy in Arts & Culture	(3 cr.)
SPEA-I 515	Data Science in Public Affairs and Environmental Affairs	(3 cr.)
SPEA-I 519	Data Base Management Systems	(3 cr.)

Area V: Community and Place

Choose one of the following

AADM-Y 507	Seminar in Community and Place	(3 cr.)
AADM-Y 526	Arts and Social Change	(3 cr.)

MPA Concentration (15 credit Hours)

Students can choose from all existing MPA concentrations, including the specialized concentration, which if chosen should be developed with an advisor and approved by faculty program director.

Students may not use MPA core classes to fulfill concentration requirements.

Experiential Requirement (0 credit hours)

AADM-Y 550	Practicum in Arts Administration	(0 cr.)
AADM-Y 750	Internship in Arts Administration	(0 cr.)

Students must reach 21 credits of SPEA and 21 credits of AADM coursework.

Other Dual M.P.A. Degree Programs

In addition to dual degree programs with the Indiana University School of Law–Bloomington, the O'Neill School of Public and Environmental Affairs collaborates with centers on area studies, other Indiana University Bloomington departments, and professional schools to deliver dual degree programs. O'Neill's combined master's degree programs address the demand for specialists with expertise in policy, management, and science and the expertise and skill offered by the partner program. Candidates for the combined degree programs, excluding the program with the Maurer School of Law, complete the core requirements for the M.P.A. degree, additional course credits in a specialized concentration for a total of 36 credit hours in the O'Neill School of Public and Environmental Affairs, plus the required courses of the participating dual program. In every case students must apply separately to and be accepted into both programs to participate in a dual degree program.

Dual degree students (other than the M.P.A.–J.D.) must complete:

- the core requirements for the M.P.A. and a specialized O'Neill concentration (36 credit hours) to include:

Required Courses (21 credit hours)

SPEA-F 560	Public Finance and Budgeting	(3 cr.)
SPEA-V 506	Statistical Analysis for Effective Decision Making	(3 cr.)
SPEA-V 512 **OR** V538	Public Policy Process **OR** Comparative and International Policy Process	(3 cr.)
SPEA-V 517	Public Management Economics	(3 cr.)
SPEA-V 532	Social Equity and Justice in Public Affairs	(1.5 cr.)
SPEA-V 535	Managing and Leading in Public Affairs	(3 cr.)
SPEA-V 536	Rights and Responsibilities: How Law Shapes Public Affairs	(1.5 cr.)
SPEA-V 537	Designing and Managing Complex Projects	(1.5 cr.)
SPEA-V 548	Evidence-Based Decision Making	(1.5 cr.)

***Note:** Extremely well-prepared applicants may petition the program director to waive one or more of the core requirements on the basis of advanced course work done elsewhere. Students may be exempted on the basis of satisfactory equivalent course work or by examination. Credit hours waived from the core add to the electives a student may use. Students requesting course waivers should contact the appropriate graduate program director for requirements and guidelines.

Specialized Area (15 credit hours)

A student, whose educational and professional goals are not satisfied by O'Neill's concentrations, may design a Specialized Concentration that best suits his or her needs in consultation with a faculty advisor with final approval required by the relevant faculty program director(s). **The student, the student's advisor, and the appropriate Faculty Program Director must sign a Specialized Concentration Form that specifies the courses that will comprise the customized concentration.** This form is available the Forms section of the Current Student Portal. The completed Specialized Concentration Form must be submitted prior to enrolling in the courses outlined. **Students are strongly encouraged to declare their concentration within the first 24 credit hours of the student's academic program.**

Although no specific guidelines exist for the courses to be included in a Specialized Concentration, students must take O'Neill courses unless approved by a faculty advisor(s) and the appropriate Faculty Program Director(s). Students must name their Specialized Concentration. However, these names will not appear on their IU transcript. Instead, after "Major" the words "Specialized Study" will appear.

O'Neill participates with the following units in the M.P.A. program. These requirements apply to all dual degrees below, except the MPA-MIS and MPA-MLS dual degrees. For these two programs, students must complete the full 24 hour MPA core, including V600, and a 12 credit hour specialized concentration.

Master of Public Affairs–Master of Arts in African American and African Diaspora Studies (M.P.A.–M.A.)
Department of African American and African Diaspora Studies

Master of Public Affairs–Master of Arts in African Studies (M.P.A.–M.A.)
Department of African Studies

Master of Public Affairs–Master of Arts in Central Eurasian Studies (M.P.A.–M.A.)
Department of Central Eurasian Studies

Master of Public Affairs–Master of Arts in East Asian Studies (M.P.A.–M.A.)
Department of East Asian Languages and Cultures

Master of Public Affairs–Master of Arts in Latin American and Caribbean Studies (M.P.A.–M.A.)
The Center for Latin American and Caribbean Studies

Master of Public Affairs–Master of Informatics Science (M.P.A.–M.I.S.)
Luddy School of Informatics, Computing and Engineering

Master of Public Affairs–Master of International Affairs (M.P.A.–M.I.A.)
The Hamilton Lugar School

Master of Public Affairs-Master of Library Science (M.P.A.-M.L.S.)
Luddy School of Informatics, Computing and Engineering

Master of Public Affairs-Master of Arts in Middle Eastern Languages and Cultures (M.P.A.-M.A.)
Middle Eastern Languages and Cultures

Master of Public Affairs–Master of Arts in Russian and East European Studies (M.P.A.–M.A.)
Russian and East European Institute

Master of Public Affairs–Master of Arts in European Studies (M.P.A.–M.A.)
European Studies

International Dual M.P.A. Degrees and Programs

Since fall 2015, select O'Neill graduate students have the opportunity to pursue concurrent masters degrees at O'Neill and an international partner university. Courses in these programs are taught in English. You must apply separately and be accepted by each program to participate in this opportunity.

South Korea: Seoul National University

Complete a dual degree with Seoul National University (SNU). SNU's Graduate School of Public Administration (GSPA) and SPEA have joined together to offer dual MPA degrees from the two institutions. GPSA aims to educate high-level civil servants, cultivate new future leaders of civil society, and provide top-class executive programs for current leaders in the public and private sectors. GSPA is located in a beautiful mountainous region south of the Han River in southeast Seoul, a vibrant city of 12 million people and site of South Korea's capital. The Seoul Metropolitan region is not only the thriving hub of South Korea, but a gateway to East Asia, within hours of Tokyo, Beijing, and Hong Kong.

Dual Degree Student Admission Requirements

Students wishing to pursue the dual MPA program will have to apply to both IUB O'Neill and SNU GSPA separately and fulfill each university's admission criteria independently. In order to qualify as dual degree applicants, students must apply to both programs concurrently or be currently enrolled in one of the programs upon application to the other. Additionally, applicants to O'Neill will have to pass IU's international student English language requirements. Korean language testing will not be required since SNU GSPA courses are taught in English.

Dual Degree Credit Hour and Graduation Requirements

	SNU GSPA Students	IUB SPEA Students
Year 1	**24 GSPA hours*** 8 courses at 3 hours each **or** 7 courses: 6 at 3 hours; one at 6 hours	**24 SPEA hours*****
Summer Credit	**6 SPEA hours** 2 classes at 3 hours	**6 SPEA hours** 2 classes at 3 hours
Year 2	**24 SPEA hours*****	**24 GSPA hours*** 8 courses at 3 hours each **or**

		7 courses: 6 at 3 hours; one at 6 hours
SNU GSPA	24 total credits	
IUB SPEA	30 total credits	
	54 total credits	

* = chosen concentration, electives, two independent study courses
* * = combination of summer programs (O'Neill Study Abroad), directed readings, internship
***=combination of core and concentration, elective courses, and one independent study

Note: core O'Neill courses include 4 courses for a total of 12 hours
Note: after core courses are satisfied, students have a remaining 24 hours to distribute towards one (or multiple concentrations at O'Neill)
Note: independent study refers to development of a thesis

SNU GSPA MPA thesis requirement

For the SNU GSPA MPA degree, students in the dual MPA program must submit a Master's thesis proposal and complete their Master's thesis, which has to be approved by SNU GSPA committee members according to the SNU GSPA academic calendar (i.e. either by mid-June or mid-December of the relevant year).

Total credit hour summary

For the SNU GSPA MPA degree, students will take 24 hours of credit at SNU GSPA out of the 36 credits required for that degree (66.7% GSPA credit). For the IUB O'Neill MPA degree, students will take 30 hours of credit at IUB O'Neill out of the 48 credits required for that degree (62.5% O'Neill credit).

Dual Master of Public Affairs and Master of International Affairs

The O'Neill School of Public and Environmental Affairs and Hamilton Lugar School offer a dual-degree program that qualifies students for an M.P.A./M.I.A. Study for the dual degree can be combined for a total of 60 credit hours instead of the 84 credit hours required for the two degrees taken separately. Neither degree will be awarded until the requirements for both degrees have been met.

Admissions Requirements

Students must be accepted by both the MIA and MPA admission committees to be admitted to the combined dual degree program. Students may apply for admission to both programs simultaneously. Alternatively, students enrolled in one program may apply for admission to the other any time before the completion of their first academic year of study.

The M.P.A. Component of the Dual M.P.A./M.I.A. Degree

O'Neill School M.P.A. Core Requirements (18 credit hours):

SPEA-F 560	Public Budgeting and Finance	(3 cr.)
SPEA-V 517	Public Management Economics	(3 cr.)
SPEA-V 532	Social and Equity Justice	(1.5 cr.)
SPEA-V 535	Managing and Leading Public Affairs	(3 cr.)
SPEA-V 536	Rights and Responsibilities: How Law Shaped Public Affairs	(1.5 cr.)
SPEA-V 537	Designing and Managing Complex Projects	(1.5 cr.)
SPEA-V 538	Comparative International Policy Process	(3 cr.)
SPEA-V 548	Evidence-Based Decision Making	(1.5 cr.)

O'Neill School M.P.A. Concentration Requirements (15 credit hours):

- Dual degree students would choose one of the 13 concentrations offered in the MPA and satisfy the required and elective courses.

O'Neill School M.P.A. Additional Requirement:

- Experiential component (0 credit hours)

Hamilton Lugar School M.I.A. Core Requirements (15 credit hours):

INTL-I 520	History of the International System	(3 cr.)
INTL-I 521	Global Governance and International Organizations	(3 cr.)
INTL-I 524	Practicum in International Policy Analysis	(3 cr.)
SPEA-D 577	International Economic Strategies and Trade Policy	(3 cr.)
SPEA-V 506	Statistical Analysis for Effective Decision Making	(3 cr.)

Hamilton Lugar School M.I.A. Concentration Requirements (12 credit hours):

- Dual degree students would choose one of the three concentrations offered in the MIA and satisfy the required and elective courses.

Hamilton Lugar School M.I.A. Additional Requirements (18 credit hours):

- At least 18 credit hours must be taken at HLS to complete the dual degree. Up to 3 credit hours of this requirement can be taken within the College.

Note: Double counting core courses is not permitted; however, up to six credits of non-core courses can double count between degrees.

Master of Environmental Sustainability

The Master of Environmental Sustainability program produces trained professionals ready to start confronting environmental issues from the moment they graduate. The degree is designed to combine a solid foundation with immense flexibility to combine science, policy, and tools courses in ways that best match student interests and career goals. A capstone course provides a finishing client-focused experience that requires students to bring many aspects of their degree to the project and to work with people with a diversity of backgrounds and training.

Degree Requirements

(36 credit hours) The core requirements of the M.E.S. degree consist of two three-credit courses: E513 Environmental Project Management and E543 Environmental Management. Each student must also complete the requirements of one concentration (9 credits) and complete one capstone course (3 credits).

Environmental Sustainability Core (6 credit hours)

The following two courses:

SPEA-E 513	Environmental Project Management	(3 cr.)
SPEA-E 543	Environmental Management	(3 cr.)

Capstone Course

(3 credit hours) The capstone course gives MES students an opportunity to use their knowledge and skills to address a real-world, client-based problem. Students from a variety of backgrounds work together on a semester-long project for an individual, organization, or agency. This requirement may be met in one of the following ways:

SPEA-V 600	Capstone in Public and Environmental Affairs	(3 cr.)

Professional Experience Credit

The O'Neill School of Public and Environmental Affairs at Indiana University - Bloomington may grant credit to students who have had relevant professional experience. Credit for professional experience reduces degree program credit requirements.

Professional-experience credit may be granted in the core, concentration or capstone portion of the MES degree, or in combinations of these, at the discretion of the MES Program Director. Professional-experience credit will result in a reduction in the total number of credit hours required for the MES degree program. Students will see this reflected in their online Academic Advising Report once the decision is shared with O'Neill's Graduate Records Office.

Students are eligible to apply:

1. Once they have been unconditionally admitted to the O'Neill-BL MES degree program.
2. If they have relevant, full-time work experience gained prior to the start of O'Neill graduate studies.

- Relevant experience is above the entry level, involved some independent managerial, analytic, or scientific responsibility and complements the student's academic program and future public service career. Work in any sector (public, nonprofit, or business) and work in any part of the world is eligible for consideration. All MES students are equally eligible to apply. Experience that is unrelated to a career in environmental sustainability, or has not involved responsibilities beyond entry-level work, generally does not qualify for professional experience. The work is generally assumed to have been paid, full-time work, but students may make the case for highly relevant volunteer and part-time work.

How much can I apply for?

- PE waivers and credit reductions are granted for experience gained prior to taking courses in the MPA, MIA, MES, and MSES programs.
- Students are encouraged to submit applications for PE within the first 12-credit hours.
- Students may be approved for more than one type of PE, but the combined credit reduction cannot exceed 6 credit hours.
- Credit reductions cannot result in the elimination of degree or concentration requirements. Students receiving prior experience credit reductions should carefully plan the balance of their program with an advisor.
- A student may not apply for PE with any of O'Neill's outside, dual degree programs (e.g., MPA-MA, MSES-JD). All of O'Neill's outside dual degree programs reflect a discounted credit hour program in an effort to streamline the academic demands for the student. Further credit reductions are not negotiable. This does not apply to O'Neill's dual MPA-MSES and MAAA-MPA degree.
- Determination of PE credit is made separately from decisions about transfer of credit. Under no circumstances will the prior experience credit and transfer credit total more than 15 credit hours.

Suggested application guidelines based on years of professional experience:

- To receive a 3-credit-hour reduction, a student must have 2-4 years of technical, administrative, scientific, or policy-level work experience with a government, nonprofit, or private agency.
- 6 credit-hours is generally possible for 4-6 years of relevant full-time analytic, technical, managerial, scientific, and/or science-based policymaking experience in environmental science, environmental management, or science-based, environmental policy, with significant responsibilities, for example, in research design, program leadership, budgetary oversight, organizational or staff development, analysis, or planning.

How do I apply?

1. If you have held more than one position, select the most relevant one as your primary position, for which additional detail will be required.
2. Fully complete the Professional Experience Application, found in the Current Student Portal, and

include a current, complete resume. A complete resume includes (1) all prior jobs and job titles, including clear information on part-time versus full-time positions, (2) all prior degrees and graduation dates, (3) the month and year in which you matriculated into the O'Neill MES program, (4) relevant volunteer assignments such as board service, and (5) distinguishes full-time jobs from part-time jobs.
3. Please provide the specific number of credit hours you are requesting for reduction, not a range.
4. Return the completed application to the O'Neill Graduate Records Office in room A328 or via email to oneillrc@indiana.edu.
5. The MES Faculty Program Director will review your application and determine the amount of Professional Experience credit to be granted.

Military Experience:
Students who have experience with the United States military may qualify for a waiver of the experiential requirement and a credit reduction. See guidelines below:

- 3-credit hour reduction and experiential waiver:
  - 1 year active duty or full-time guard/reserve service
  - 2 years part-time guard/reserve service
- 6-credit hour reduction and experiential waiver:
  - 2 years active duty or full-time guard/reserve service
  - 4 years part-time guard/reserve service

Concentrations

(27 credit hours) Each concentration must include at least 6 credits of fundamental science courses and at least 6 credits of applications courses. Courses will be chosen in conjunction with an advisor to ensure the best match to student interests and career goals. Each student should select one of the following concentrations:

- Environmental Quality and Toxicology
- Municipal Sustainability
- Sustainable Natural Resource Conservation and Management
- Sustainable Water Resources

Master of Environmental Sustainability Concentrations

Environmental Quality and Toxicology Concentration

The environmental quality and toxicology concentration (27 credit hours) prepares students to address issues such as air pollution, water quality, contaminants, and solid and hazardous wastes using quantitative tools such as risk assessment and best practices such as risk communication. Graduates will be prepared to work in the public, private, or non-profit sectors. States and municipalities are becoming increasingly innovative in this area, and SPEA students will be well equipped to work at these levels as well as at national and international levels.

Fundamental Science Electives (6-21 credit hours)

Select at least 6 credit hours, but no more than 21 credit hours of the following courses: (students may also take science electives from the general science electives list that appears after the concentration-specific course lists)

SPEA-E 431	Water Supply and Wastewater Treatment	(3 cr.)
SPEA-E 451	Air Pollution and Control	(3 cr.)
SPEA-E 502	Water Quality Modeling	(3 cr.)
SPEA-E 503	Natural Gas: Technical and Policy Challenges	(3 cr.)
SPEA-E 504	Sustainable River Management: Theory and Practice	(3 cr.)
SPEA-E 515	Fundamentals of Air Pollution	(3 cr.)
SPEA-E 520	Environmental Toxicology	(3 cr.)
SPEA-E 536	Environmental Chemistry	(3 cr.)
SPEA-E 537	Environmental Chemistry Lab	(3 cr.)
SPEA-E 539	Aquatic Chemistry	(3 cr.)
SPEA-E 542	Hazardous Materials	(3 cr.)
SPEA-E 554	Groundwater Flow Modeling	(3 cr.)
SPEA-E 555	Conservation Planning	(3 cr.)
SPEA-E 562	Solid and Hazardous Waste Management	(3 cr.)
SPEA-E 564	Organic Pollutants: Environmental Chemistry and Fate	(3 cr.)
GOEG-G 551	Physical Hydrology	(3 cr.)

Applications (6-21 credit hours)

Select at least 6 credit hours, but no more than 21 credit hours of the following courses: (students may also take applications electives from the general application electives list that appears after the concentration-specific course lists)

SPEA-E 501/ SPEA-X 511	Human Behavior and Energy Consumption	(3 cr.)
SPEA-E 512	Risk Communication	(3 cr.)
SPEA-E 514	Changing Landscape of Toxic Chemical Regulations	(3 cr.)
SPEA-E 517	BMP Design for Healthy Urban Watersheds	(3 cr.)
SPEA-E 518	Vector-based Geographic	(3 cr.)

	Information Systems	
SPEA-E 529	Application of Geographic Information Systems	(3 cr.)
SPEA-E 552	Environmental Engineering	(3 cr.)
SPEA-E 560	Environmental Risk Analysis	(3 cr.)
SPEA-E 574	Energy Systems in Transition	(3 cr.)
SPEA-R 674	Energy Economics and Policy	(3 cr.)

Municipal Sustainability Concentration

The municipal sustainability concentration (27 credit hours) prepares students to address issues associated with air pollution, waste management, water management, and green-space management in towns and cities. Graduates will be prepared to work in the public, private, or non-profit sectors. Relevant employment will not come only at the municipal level; states and nations must also work with and plan for cities, so employment will be available at all levels from municipal to international.

Fundamental Science Electives (6-21 credit hours)

Select at least 6 credit hours, but no more than 21 credit hours of the following courses: (students may also take science electives from the general science electives list that appears after the concentration-specific course lists)

SPEA-E 431	Water Supply and Wastewater Treatment	(3 cr.)
SPEA-E 451	Air Pollution and Control	(3 cr.)
SPEA-E 502	Water Quality Modeling	(3 cr.)
SPEA-E 504	Sustainable River Management: Theory and Practice	(3 cr.)
SPEA-E 505	Renewable and Nuclear Energy and Climate Change	(3 cr.)
SPEA-E 515	Fundamentals of Air Pollution	(3 cr.)
SPEA-E 520	Environmental Toxicology	(3 cr.)
SPEA-E 522	Urban Forest Management	(3 cr.)
SPEA-E 527	Applied Ecology	(3 cr.)
SPEA-E 537	Environmental Chemistry Lab	(3 cr.)
SPEA-E 539	Aquatic Chemistry	(3 cr.)
SPEA-E 540	Wetlands Ecology and Management	(4 cr.)
SPEA-E 542	Hazardous Materials	(3 cr.)
SPEA-E 546	Stream Ecology	(3 cr.)
SPEA-E 555	Conservation Planning	(3 cr.)
SPEA-E 555	Fluid Mechanics	(3 cr.)
SPEA-E 555	Sustaining Urban Ecosystems	(3 cr.)
SPEA-E 556	Limnology	(4 cr.)
SPEA-E 561	Wildlife Techniques	(3 cr.)
SPEA-E 562	Solid and Hazardous Waste Management	(3 cr.)
SPEA-E 563	Wildlife Management	

Applications (6-21 credit hours)

Select at least 6 credit hours, but no more than 21 credit hours of the following courses: (students may also take applications electives from the general application electives list that appears after the concentration-specific course lists)

SPEA-E 501/ SPEA-X 511	Human Behavior and Energy Consumption	(3 cr.)
SPEA-E 512	Risk Communication	(3 cr.)
SPEA-E 514	Changing Landscape of Toxic Chemical Regulations	(3 cr.)
SPEA-E 517	BMP Design for Healthy Urban Watersheds	(3 cr.)
SPEA-E 534	Restoration Ecology	(3 cr.)
SPEA-E 545	Lake and Watershed Management	(3 cr.)
SPEA-E 552	Environmental Engineering	(3 cr.)
SPEA-E 555	Environmental Monitoring	(3 cr.)
SPEA-E 555	Food Systems and Community Resilience	(3 cr.)
SPEA-E 560	Environmental Risk Analysis	(3 cr.)
SPEA-E 574	Energy Systems in Transition	(3 cr.)
SPEA-E 591/ SPEA-R 591	Climate Change Impacts on Natural Resources	(3 cr.)
SPEA-I 516	Public Management Information Systems	(3 cr.)
SPEA-L 563	Planning and Community Development	(3 cr.)
SPEA-L 564	Urban Management	(3 cr.)

SPEA-L 568	Management of Local Government Services	(3 cr.)
SPEA-M 654	Public Program Management and Contracting	(3 cr.)
SPEA-R 512	Energy and Climate: Law and Policy	(3 cr.)
SPEA-R 532	Water Policy and Economics	(3 cr.)
SPEA-R 563	Sustainability in a Tri-sectoral World	(3 cr.)
SPEA-R 674	Energy Economics and Policy	(3 cr.)
SPEA-S 515	Sustainable Communities	(3 cr.)
SPEA-S 516	Preparing for Climate Change and Resilient Urban Communities	(3 cr.)

Sustainable Natural Resource Conservation and Management Concentration

The sustainable natural resource conservation and management concentration (27 credit hours) provides training in conservation and management of ecosystems and their biodiversity. Graduates will be prepared for public, private, and non-profit positions in agencies, companies, and organizations at local to international levels. Increasingly, positions are available in towns and cities (urban forestry, green space management, urban wildlife management) as well as conserved and managed natural areas.

Fundamental Science Electives (6-21 credit hours)

Select at least 6 credit hours, but no more than 21 credit hours of the following courses: (students may also take science electives from the general science electives list that appears after the concentration-specific course lists)

SPEA-E 504	Sustainable River Management	(3 cr.)
SPEA-E 522	Urban Forest Management	(3 cr.)
SPEA-E 527	Applied Ecology	(3 cr.)
SPEA-E 528	Forest Ecology and Management	(3 cr.)
SPEA-E 540	Wetlands Ecology and Management	(4 cr.)
SPEA-E 546	Stream Ecology	(3 cr.)
SPEA-E 550	Soil Science and Management	(3 cr.)
SPEA-E 555	Conservation Planning	(3 cr.)
SPEA-E 555	Plants and Plant Communities	(3 cr.)
SPEA-E 555	Sustaining Urban Ecosystems	(3 cr.)
SPEA-E 556	Limnology	(4 cr.)
SPEA-E 557	Conservation Biology	(3 cr.)
SPEA-E 561	Wildlife Techniques	(3 cr.)
SPEA-E 563	Wildlife Management	(3 cr.)
BIOL-B 300	Vascular Plants	(3 cr.)
BIOL-L 376	Biology of Birds	(3 cr.)

Applications (6-21 credit hours)

Select at least 6 credit hours, but no more than 21 credit hours of the following courses: (students may also take applications electives from the general application electives list that appears after the concentration-specific course lists)

SPEA-E 504	Sustainable River Management	(3 cr.)
SPEA-E 534	Restoration Ecology	(3 cr.)
SPEA-E 545	Lake and Watershed Management	(3 cr.)
SPEA-E 555	Conservation Planning	(3 cr.)
SPEA-E 555	Food Systems and Community Resilience	(3 cr.)
SPEA-E 591/ SPEA-R 591	Climate Change Impacts on Natural Resources	(3 cr.)
SPEA-R 512	Energy and Climate: Law and Policy	(3 cr.)
SPEA-R 513	Wildlife Law	(3 cr.)
SPEA-R 516	Sustainable Agriculture and Environmental Governance	(3 cr.)
SPEA-R 531	Water Law	(3 cr.)
SPEA-R 533	Public Natural Resources Law	(3 cr.)

Sustainable Water Resources Concentration

The sustainable water resources concentration (27 credit hours) provides training in issues of water quality, water quantity, and aquatic ecology. Students may choose courses in all three areas or may focus on one or two areas. Graduates will be prepared to work in the public, private, or non-profit sectors. States and municipalities are become increasingly innovative in this area, and SPEA students will be well equipped to work at these levels as well as at national and international levels.

Fundamental Science Electives (6-21 credit hours)

Select at least 6 credit hours, but no more than 21 credit hours of the following courses: (students may also take science electives from the general science electives list that appears after the concentration-specific course lists)

SPEA-E 431	Water Supply and Wastewater Treatment	(3 cr.)
SPEA-E 502	Water Quality Modeling	(3 cr.)

SPEA-E 504	Sustainable River Management: Theory and Practice	(3 cr.)
SPEA-E 527	Applied Ecology	(3 cr.)
SPEA-E 539	Aquatic Chemistry	(3 cr.)
SPEA-E 540	Wetlands Ecology and Management	(4 cr.)
SPEA-E 546	Stream Ecology	(3 cr.)
SPEA-E 550	Soil Science and Management	(3 cr.)
SPEA-E 555	Fluid Mechanics	(3 cr.)
SPEA-E 555	Watershed Hydrology	(3 cr.)
SPEA-E 555	Sustaining Urban Ecosystems	(3 cr.)
SPEA-E 556	Limnology	(4 cr.)
GEOG-G 551	Physical Hydrology	(3 cr.)

Applications (6-21 credit hours)

Select at least 6 credit hours, but no more than 21 credit hours of the following courses: (students may also take applications electives from the general application electives list that appears after the concentration-specific course lists)

SPEA-E 504	Sustainable River Management	(3 cr.)
SPEA-E 534	Restoration Ecology	(3 cr.)
SPEA-E 545	Lake and Watershed Management	(3 cr.)
SPEA-E 552	Environmental Engineering	(3 cr.)
SPEA-E 555	Food Systems and Community Resilience	(3 cr.)
SPEA-R 516	Sustainable Agriculture and Environmental Governance	(3 cr.)
SPEA-R 531	Water Law	(3 cr.)
SPEA-R 532	Water Policy and Economics	(3 cr.)
SPEA-E 591/ SPEA-R 591	Climate Change Impacts on Natural Resources	(3 cr.)

General M.E.S. Fundamental Science and Applications Electives

The following courses are available as electives for all concentrations for which they may be relevant. Science or applications electives listed under the individual concentrations are particularly focused on that concentration. Science or applications electives listed here are potentially relevant to more than one concentration, and may also occur as concentration electives. Note that some general science or applications electives serve as prerequisites for other science or applications electives.

Science electives:

ANTH-E 527	Environmental Anthropology	(3 cr.)
BIOL-B 300	Vascular Plants	(3 cr.)
BIOL-L 376	Biology of Birds	(3 cr.)
BIOL-L 579	Community Ecology	(3 cr.)
BIOL-L 581	Behavioral Ecology	(3 cr.)
BIOL-Z 406	Vertabrate Zoology	(3-5 cr.)
BIOL-Z 460	Animal Behavior	(3 cr.)
BIOL-Z 620	Quantitative Biodiversity	(3 cr.)
GEOG-G 551	Water Resources	(3 cr.)
GEOG-G 577	Scientific Programming in MATLAB	(3 cr.)
GEOL-G 544	Methods in Analytical Geochemistry	(3 cr.)
GEOL-G 547	Instrumentation for Atmospheric Science	(3 cr.)
GEOL-G 550	Surface Water Hydrology	(3 cr.)
GEOL-G 576	Climate Change	(3 cr.)

Applications electives:

SPEA-E 518	Vector-based Geographic Information Systems	(3 cr.)
SPEA-E 529	Application of Geographic Information Systems	(3 cr.)
SPEA-E 538	Statistics for Environmental Science	(3 cr.)
SPEA-E 560	Environmental Risk Analysis	(3 cr.)
SPEA-E 512	Risk Communication	(3 cr.)
SPEA-I 516	Public Management	(3 cr.)
SPEA-I 519	Database Management Systems	(3 cr.)
SPEA-L 564	Urban Management	(3 cr.)
SPEA-M 547	Negotiation and Dispute Resolution	(3 cr.)
SPEA-M 654	Public Program Management and Contracting	(3 cr.)
SPEA-N 521	The Nonprofit and Voluntary Sector	(3 cr.)
SPEA-N 557	Proposal Development and Grant Administration	(3 cr.)

SPEA-N 558	Fund Development for Nonprofits	(3 cr.)
SPEA-P 507	Data Analysis and Modeling for Public Affairs	(3 cr.)
SPEA-P 539	Management Science for Public Affairs	(3 cr.)
SPEA-P 541	Benefit-Cost Analysis	(3 cr.)
SPEA-P 562	Public Program Evaluation	(3 cr.)
SPEA-R 513	Wildlife Law	(3 cr.)
SPEA-R 521	Domestic Environmental Policy	(3 cr.)
SPEA-R 531	Water Law	(3 cr.)
SPEA-R 533	Public Natural Resource Law	(3 cr.)
SPEA-R 535	International Environmental Policy	(3 cr.)
SPEA-R 563	Sustainability in a Tri-sectoral World	(3 cr.)
SPEA-R 564	Environmental and Natural Resource Policy Design and Implementation	(3 cr.)
SPEA-R 625	Environmental Economics and Policy	(3 cr.)
SPEA-R 643	Natural Resource Management and Policy	(3 cr.)
SPEA-R 645	Environmental Law	(3 cr.)
SPEA-S 516	Preparing for Climate Change and Resilient Urban Communities	(3 cr.)
SPEA-S 596	Sustainable Development	(3 cr.)
SPEA-V 517	Public Management Economics	(3 cr.)
SPEA-V 550	Communications for Public and Nonprofit Sectors (online)	(3 cr.)
SPEA-V 550	Environmental Policy (online)	(3 cr.)
ANTH-E 621	Food and Culture	(3 cr.)
GEOG-G 515	Sustainable Urbanism	(3 cr.)
GEOG-G 544	Climate Change Impacts	(3 cr.)
GEOG-G 549	Political Ecology	(3 cr.)
GEOG-G 553	Water and Society	(3 cr.)
GEOG-G 561	Human Dimensions of Global Environmental Change	(3 cr.)
GEOG-G 578	Global Change, Food, and Farming Systems	(3 cr.)
SPH-O 510	Human Health and the environment	(3 cr.)
SPH-O 517	Ecosystem Management	(3 cr.)
SPH-R 511	Organizational Leadership of Leisure Services	(3 cr.)
SPH-R 523	Policy Studies in Outdoor Recreation and Tourism	(3 cr.)
SPH-R 524	Strategic Fundraising and Partnerships for Park, Recreation and Public Lands	(3 cr.)
SPH-R 525	Foundations of Conservation, Parks, and Recreation	(3 cr.)
SPH-R 530	Comprehensive Park, Recreation and Facility Planning and Design	(3 cr.)

Master of Science in Environmental Science

The Master of Science in Environmental Science (M.S.E.S.) program educates professionals who combine specialization in an area of environmental science with the analytical and policy skills necessary to apply that knowledge in a broader context. This degree program includes an experiential requirement, usually fulfilled by an internship; this requirement can also be fulfilled by the M.S.E.S. thesis concentration or through prior professional experience.

For students desiring more in-depth study in environmental science, the M.S.E.S. program is an excellent preparation for entry into the Ph.D. in Environmental Science program. Alternatively, students desiring more in-depth preparation in policy, law, or other related fields can combine their M.S.E.S. degree with a degree in Public Affairs (M.P.A.–M.S.E.S), law (M.S.E.S.–J.D.), or a number of other disciplines in Chemistry, Geological Sciences, or Physics.

Program Qualifications

The M.S.E.S. Admissions Committee looks for applicants with an adequate background in quantitative and natural science subjects. As a minimum, you must have completed at least one (1) semester of Calculus and Chemistry with a lab. Familiarity with statistics and biology/ecology is considered desirable. An applicant who does not meet these minimum requirements may be admitted with a calculus and/or chemistry deficiency. In these cases, SPEA is interested in assisting you with options to address the deficiency(ies) that may have been identified by the M.S.E.S. Admissions Committee.

Entrance Requirements

All students must have undergraduate coursework relevant to their intended area of focus in the M.S.E.S. degree program. Students are expected to have an adequate background in quantitative natural science subjects (e.g., mathematics, chemistry, and biology/ecology), which may vary according to the concentration the student selects.

Prior Experience:

A student's experiential requirement may be satisfied through Prior Experience (PE). Depending upon the type and amount of experience, a student may qualify for a credit reduction as well. There are three categories of PE (Professional, Military, and Volunteer) available to MPA, MIA, MSES, MPA-MSES, and MES students. MAAA and MAAA-MPA students have different guidelines for PE, as they are governed by the University Graduate School. Applications for the different types of PE may be picked up in the Master's Programs Office (MPO – SPEA A304) or online via the Current Student Portal in the Forms section. Completed forms should be returned to the O'Neill Graduate Records Office (SPEA A328 or oneillrc@indiana.edu) to be advanced to the appropriate Faculty Program Director for review.

- PE waivers and credit reductions are granted for experience gained prior to taking courses in the MPA, MES, and MSES programs.
- Students are encouraged to submit applications for PE within the first 24-credit hours.
- Students may be approved for more than one type of PE, but the combined credit reduction cannot exceed 9-credit hours.
- Credit reductions cannot result in the elimination of degree or concentration requirements. Students receiving prior experience credit reductions should carefully plan the balance of their program with an advisor.
- A student may not apply for PE with any of O'Neill's outside, dual degree programs (e.g., MPA-MA, MSES-JD). All of O'Neill's outside dual degree programs reflect a discounted credit hour program in an effort to streamline the academic demands for the student. Further credit reductions are not negotiable. This does not apply to O'Neill's dual MPA-MSES and MAAA-MPA degree.
- Determination of PE credit is made separately from decisions about transfer of credit. Under no circumstances will the prior experience credit and transfer credit total more than 18-credit hours.

Professional Experience:

Experiential waivers and credit reductions can be granted for prior professional or technical work experience. The appropriate Faculty Program Director determines if the experience qualifies for a waiver and/or reduction. In general, credit reductions require work experience above entry level that involves some independent managerial, analytic, or scientific responsibility and work that articulates with the student's current field of study. Applicants may appeal a professional credit decision by submitting a request, in writing, for reconsideration and providing additional information. Students receiving prior professional experience credit should carefully plan the balance of their program with a faculty advisor.

General guidelines to qualify for Professional Experience:

- Work must have been full-time, either paid or unpaid.
- To receive a waiver of the degree's experiential requirement, work experience should roughly equal or surpass that of a summer internship.
- To qualify for credit reduction in addition to a waiver of the experiential requirement, at least two years of relevant full-time work is required.
- Position may be with government, private firm, or nonprofit organization, but the work must be explicitly related to a MPA or MSES career path, regardless of the type of employer.
- Employing entity may be domestic or international. Documentation from supervisors may be required.

MSES Guidelines:

- To receive a 3-credit-hour reduction, a student must have 2-4 years of full-time technical, administrative, scientific, and/or science-based environmental policy experience with a government, nonprofit, or private agency.
- To receive a 6 credit hour reduction, a student must have 4-6 years of relevant full-time analytic, technical, administrative, scientific, and/or science-based, environmental policy experience, with significant responsibilities, for example, in research design, program leadership, budgetary oversight, organizational or staff development, analysis, or planning.

- A 9-credit-hour reduction is possible for five to seven yearsover 6 years of relevant full-time research, analytic, technical, administrative, and/or science-based policy experience. At this point, at least one higher-level, multi-year assignment is expected, including directing research, responsibility for supervision of staff, budget preparation, or organizational control of public or nonprofit agencies or private companies.

Military Experience:
Students who have experience with the United States military may qualify for a waiver of the experiential requirement and a credit reduction. See guidelines below:

- 3-credit hour reduction and experiential waiver:
  - 1 year active duty or full-time guard/reserve service
  - 2 years part-time guard/reserve service
- 6-credit hour reduction and experiential waiver:
  - 2 years active duty or full-time guard/reserve service
  - 4 years part-time guard/reserve service
- 9-credit hour reduction and experiential waiver:
  - 4 years active duty or full-time guard/reserve service
  - 8 years part-time guard/reserve service

Volunteer Experience:
Students who have participated as a volunteer in Peace Corps, AmeriCorps, or Teach For America are eligible for a credit reduction based on years of service, as well as a waiver of their experiential component. The O'Neill School will grant a 3-credit reduction for one year of service and a 6-credit reduction for two years of service. Proof of service will be required.

Accelerated Master of Science in Environmental Science

On the Bloomington campus, the Accelerated Master's Program (AMP) allows exceptional undergraduate O'Neill students to earn both their undergraduate degree and a Master of Public Affairs (MPA) or Master of Science in Environmental Science (MSES) within an accelerated time frame (generally five years).

Participation in this program may allow the student to fulfill some graduate program requirements during their senior or fourth year. Depending upon the path chosen, some graduate courses may count for both graduate and undergraduate degree requirements. For additional information, including major specific requirements, students should meet with their undergraduate academic advisor.

Students wishing to participate in the AMP must meet these minimum requirements:

- Have a minimum undergraduate cumulative GPA of 3.5 for the MPA or 3.0 for the MSES.
- Earn at least 96 credit hours in the undergraduate degree before AMP start, including specified courses in the major (see undergraduate advising for major specific requirements).
- Complete the undergraduate internship prior to AMP start, and if a O'Neill honors student, complete the honors thesis requirement.
- Satisfy all undergraduate general education, minors, and/or certificate requirements before AMP start.
- Complete an academic advising planning session and statement of academic intent prior to the beginning of junior or third year (at least one year prior to intended AMP start).

Degree Requirements

The M.S.E.S. program requires 48 credit hours distributed among four sets of courses:

- science courses
- policy and management courses
- tool skill courses
- and an experiential requirement

There are no required courses per se; however, each student is expected to demonstrate several competencies, depending on his or her concentration. These competencies include relevant natural and physical sciences, economics, policy or law, and quantitative problem solving. A Curriculum Advisory Committee works with the student to ensure that these competencies are met and that the student is pursuing a suitable plan of study. This curriculum provides students with a general knowledge of environmental science, the tool skills to allow them to apply that knowledge, and a specialized area of expertise.

Environmental Science Core Competencies

Required courses (15 credit hours)

Each student should demonstrate a competency in the following areas of environmental science: mathematics, statistics, chemistry, engineering principles, and ecology. The selection of courses may vary according to the students background. Some or all of the following course categories may be appropriate to be determined in consultation with the gatekeepers for each course category.

SPEA-E 526	Applied Mathematics for Environmental Science	(3 cr.)
SPEA-E 527	Applied Ecology	(3 cr.)
SPEA-E 536	Environmental Chemistry	(3 cr.)
SPEA-E 538	Statistics for Environmental Science	(3 cr.)
OR		
SPEA-V 506	Statistical Analysis for Effective Decision Making	(3 cr.)
SPEA-E 552	Environmental Engineering	(3 cr.)

Economics, Management, and Policy Core Competencies

(6 credit hours) Each student should demonstrate a competency in these areas of environmental management. The selection of courses may vary according to the student's concentration and professional objectives. Courses should be selected in consultation with a faculty advisor; other relevant courses not listed here may be approved by an advisor.

SPEA-E 543	Environmental Management	(3 cr.)
SPEA-R 512	Climate Law and Policy	(3 cr.)
SPEA-R 513	Wildlife Law	(3 cr.)
SPEA-R 516	Sustainable Agriculture and Environmental Governance	(3 cr.)
SPEA-R 517	Environmental Justice	(3 cr.)
SPEA-R 519	Food Systems and Community Resilience	(3 cr.)
SPEA-R 521	Domestic Environmental Policy	(3 cr.)
SPEA-R 531	Water Law	(3 cr.)
SPEA-R 532	Water Policy and Economics	(3 cr.)
SPEA-R 533	Public Natural Resources Law	(3 cr.)
SPEA-R 535	International Environmental Policy	(3 cr.)
SPEA-R 563	Corporate Sustainability in a Tri-Sectoral World	(3 cr.)
SPEA-R 564	Environmental and Natural Resource Policy Design and Implementation	(3 cr.)
SPEA-R 625	Environmental Economics and Policy	(3 cr.)
SPEA-R 626	Energy Policy Seminar	(3 cr.)
SPEA-R 643	Environmental Resource Management and Policy	(3 cr.)
SPEA-R 645	Environmental Law	(3 cr.)
SPEA-R 674	Energy Economics and Policy	(3 cr.)
SPEA-S 596	Sustainable Development	(3 cr.)
SPEA-V 517	Public Management Economics	(3 cr.)
SPEA-V 550	Food Policy in a Changing World	(3 cr.)

Tool Skill Courses

(Typically 3–9 credit hours) Students are encouraged to acquire competency in analytical methods by focusing on tool skills appropriate to their concentration. Courses should be selected in consultation with a faculty advisor.

SPEA-E 518	Vector-based Geographic Information Systems	(3 cr.)
SPEA-E 529	Applications of Geographic Information Systems	(3 cr.)
SPEA-E 554	Groundwater Flow Modeling	(3 cr.)
SPEA-E 555	Introduction to Coding for Environment and Policy	(1 cr.)
SPEA-E 555	Python Programming for Environment and Policy	(1 cr.)
SPEA-E 555	Using R for Environment and Policy	(1 cr.)
SPEA-E 560	Environmental Risk Analysis	(3 cr.)
SPEA-P 507	Data Analysis and Modeling for Public Affairs	(3 cr.)
SPEA-P 539	Management Science for Public Affairs	(3 cr.)
SPEA-P 541	Benefit Cost Analysis	(3 cr.)
SPEA-P 562	Public Program Evaluation	(3 cr.)

Capstone Course

(3 credit hours) Each candidate for the M.S.E.S. degree should take a course during which they participate in a team to carry out an integrative project that addresses a multidisciplinary problem. Completion of the MSES Thesis Concentration satisfies the MSES capstone requirement. Students interested in completing a research thesis will find additional information on the MSES Thesis Concentration pages.This requirement may be met in one of the following ways:

- SPEA-V 600 Capstone in Public and Environmental Affairs, sections with an environmental focus.
- An alternative course with a similar structure, such as SPEA-E 546 Stream Ecology, SPEA-E 517 BMP Design for Healthy Urban Watersheds **or** SPEA-E 560 Environmental Risk Analysis or other approved course.
- Completion of the MSES Thesis Concentration satisfies the MSES capstone requirement. Students interested in completing a research thesis will find additional information on the MSES Thesis Concentration pages.

All capstone projects are expected to culminate in a formal report and public presentation.

Experiential Requirement

Each candidate for the MSES degree must obtain professionally relevant experience through one of the following options: an approved internship (includes research internships) (SPEA-E 589; 0–6 credit hours), completion of the MSES thesis concentration, or the

award of prior professional experience credit. Students are encouraged to discuss with faculty members the relative merits of their experience opportunities, according to individual career objectives.

Concentrations

(15 credit hours) Each student should select one of the following concentrations. Topics courses and independent study credits may be included in any concentrations with the approval of a faculty advisor.

- Ecology and Conservation
- Energy and Climate Change Science
- Environmental Chemistry, Toxicology, and Risk Assessment
- Water Resources
- Specialized
- Thesis

Ecology and Conservation Concentration

The ecology and conservation concentration (15 credit hours) focuses on problem-solving techniques applied to current ecological issues. The diversity of the earth's living species in both natural and managed ecosystems offers students a variety of study areas within ecology and conservation, including forest ecology and management, fisheries and wildlife management, soil and watershed management, endangered species, and wetlands. Courses should be selected in consultation with a faculty advisor.

Field and Identification Core (6 credit hours)

Select two courses from the following list:

SPEA-E 528	Forest Ecology and Management	(3 cr.)
SPEA-E 540	Wetlands Ecology and Management	(4 cr.)
SPEA-E 546	Stream Ecology	(3 cr.)
SPEA-E 555	Plants and Plant Communities	(3 cr.)
SPEA-E 556	Limnology	(4 cr.)
SPEA-E 561	Wildlife Techniques	(3 cr.)
SPEA-E 563	Wildlife Management	(3 cr.)
BIOL-B 300	Vascular Plants	(4 cr.)
BIOL-L 376	Biology of Birds	(4 cr.)

Electives (9 credit hours)

Take an additional three classes from the above list or from the additional electives listed below.

SPEA-E 504	Sustainable River Management	(3 cr.)
SPEA-E 517	BMP Design for Healthy Urban Watersheds	(3 cr.)
SPEA-E 520	Environmental Toxicology	(3 cr.)
SPEA-E 522	Urban Forest Management	(3 cr.)
SPEA-E 534	Restoration Ecology	(3 cr.)
SPEA-E 545	Lake and Watershed Management	(3 cr.)
SPEA-E 550	Soil Science and Management	(3 cr.)
SPEA-E 555	Conservation Planning	(3 cr.)
SPEA-E 555	Sustaining Urban Ecosystems	(3 cr.)
SPEA-E 557	Conservation Biology	(3 cr.)
SPEA-E 591	Climate Change Impacts on Natural Resources	(3 cr.)
BIOL-L 579	Community Ecology	(3 cr.)

Energy and Climate Change Science Concentration

The MSES Energy and Climate-Change Science concentration (15 credit hours) trains students in the scientific and technological aspects of energy generation, utilization, and impacts of these practices, as well as science and technology associated with the study of climate change and its impacts. Courses should be selected in consultation with a concentration advisor to ensure the best fit for student interests in this broad and dynamic field.

Required Course (3 credit hours)

SPEA-E 574	Energy Systems in Transition	(3 cr.)

Electives (12 credit hours)

Select four of the following courses. Two may be out-of-O'Neill courses.

SPEA-E 505	Renewable and Nuclear Energy and Climate Change	(3 cr.)
SPEA-E 515	Fundamentals of Air Pollution	(3 cr.)
SPEA-E 591	Climate Change Impacts on Natural Resources	(3 cr.)
SPEA-R 674	Energy Economics and Policy	(3 cr.)
EAS-G 534	Dynamic Meteorology II	(3 cr.)
EAS-G 537	Synoptic Meteorology and Climatology	(3 cr.)
EAS-G 540	Physical Meteorology, Climate, and Paleoclimate	(3 cr.)
EAS-G 556	Wind Power Meteorology	(3 cr.)
EAS-G 576	Climate Change Science	(3 cr.)

GEOG-G 532	Physical Climatology	(3 cr.)
GEOG-G 544	Climate Change Impacts	(3 cr.)

Environmental Chemistry, Toxicology, and Risk Assessment Concentration

The environmental chemistry, toxicology, and risk assessment concentration (15 credit hours) addresses the fate and transport of chemicals in the environment and the hazards and risks to human health and the environment associated with chemical pollution. Courses on the chemical/physical/biological reactions of pollutants in soil, aquatic, and atmospheric systems are included. Additional courses study the hazards associated with chemicals used in modern society, technologies available to manage and remediate contaminated sites, the toxicological effects of chemical exposure, and methods to assess risks associated with chemicals in the environment. Courses should be selected in consultation with a faculty advisor.

Core (9 credit hours)

Select one course from each of the following three groups:

Environmental Chemistry

SPEA-E 515	Fundamentals of Air Pollution	(3 cr.)
SPEA-E 539	Aquatic Chemistry	(3 cr.)
SPEA-E 564	Organic Pollutants: Environmental Chemistry and Fate	(3 cr.)

Toxicology

SPEA-E 514	The Changing Landscape of Toxic Chemical Regulations	(3 cr.)
SPEA-E 520	Environmental Toxicology	(3 cr.)

Risk Analysis

SPEA-E 560	Environmental Risk Analysis	(3 cr.)

Electives (6 credit hours)

Select an additional two courses from the above lists or from the additional electives listed below:

SPEA-E 537	Environmental Chemistry Laboratory	(3 cr.)
SPEA-E 542	Hazardous Materials	(3 cr.)
SPEA-E 554	Groundwater Flow Modeling	(3 cr.)
SPEA-E 562	Solid and Hazardous Waste Management	(3 cr.)
EAS-A 547	Atmospheric Instrumentation	(3 cr.)

Water Resources Concentration

The water resources concentration (15 credit hours) emphasizes scientific principles of water quantity and quality. Courses provide information and problem-solving skills using biological, chemical, and physical descriptions of water in the environment. Courses should be selected in consultation with a faculty advisor.

Core (9 credit hours)

Take three courses including at least one course from each section.

Physical and Chemical Aspects of Water:

SPEA-E 539	Aquatic Chemistry	(3 cr.)
SPEA-E 554	Groundwater Flow Modeling	(3 cr.)
SPEA-E 555	Watershed Hydrology	(3 cr.)
GEOG-G 551	Physical Hydrology	(3 cr.)

Ecological Aspects of Water:

SPEA-E 516	Fisheries Management	(3 cr.)
SPEA-E 540	Wetlands Ecology and Management	(4 cr.)
SPEA-E 546	Stream Ecology	(3 cr.)
SPEA-E 556	Limnology	(4 cr.)

Electives (6 credit hours)

Select an additional two classes from the above lists or from the additional electives listed below.

SPEA-E 504	Sustainable River Management	(3 cr.)
SPEA-E 517	BMP Design for Healthy Urban Watersheds	(3 cr.)
SPEA-E 534	Restoration Ecology	(3 cr.)
SPEA-E 545	Lake and Watershed Management	(3 cr.)
SPEA-E 557	Conservation Biology	(3 cr.)
SPEA-E 591	Climate Change Impacts on Natural Resources	(3 cr.)
GEOG-G 567	Ecohydrology	(3 cr.)

Specialized Concentration

(15 credit hours) A student, whose educational and professional goals are not satisfied by O'Neill's concentrations, may design a Specialized Concentration that best suits his or her needs in consultation with a faculty advisor with final approval required by the relevant faculty program director(s). **The student, the student's advisor, and the appropriate Faculty Program Director must sign a Specialized Concentration Form that specifies the courses that will comprise the customized concentration**. This form is available in Forms section of the Current Student Portal. The completed Specialized Concentration Form must be submitted prior to enrolling in the courses outlined.

Students are strongly encouraged to declare their concentration within the first 24 credit hours of the student's academic program.

Although no specific guidelines exist for the courses to be included in a Specialized Concentration, students must take O'Neill courses unless approved by a faculty advisor(s) and the appropriate Faculty Program Director(s). Students must name their Specialized Concentration. However, these names will not appear on their IU transcript. Instead, after "Major" the words "Specialized Study" will appear.

Note – the Thesis concentration, which subsumes the capstone and tools courses, is not reduced, and remains at 18 credits; it allows a free elective in the MPA-MSES.

Thesis Concentration

Students who wish to pursue their own research may do so under the MSES thesis concentration (18 credit hours). Note that a master's thesis is generally not required for admission to doctoral programs, although research experience (for example, through GAships or research internships) is strongly recommended. Students interested in research experience and considering a future doctoral degree should talk with the MSES faculty advisors to determine what kinds of research experience will be most useful to them.

Students pursue the M.S.E.S. thesis concentration under the guidance of a major professor and thesis committee comprising at least 3 SPEA faculty (including the major advisor). Students must find a faculty member willing to work with them as a major professor, and must do so early in their degree, preferably in their first semester.

M.S.E.S. thesis concentrations must have a minimum of 18 credits, comprising environmental science coursework and research credit (E625), and may have as much as 24 credits. The mix of research and courses is designed and agreed upon among the student, major advisor, and other committee members, and must be approved by the M.S.E.S program director. When the thesis is completed, the student must successfully defend the thesis, providing a public presentation about the research and then making a closed-door defense to the thesis committee.

M.S.E.S. students taking the thesis concentration must still meet the requirement for at least 6 credits of Economics/ Management/Policy coursework, which will typically fall outside the thesis concentration. The capstone requirement and experiential requirement are met by the thesis concentration: students do not need to take a specific capstone course nor are they required to complete an internship. This does not prevent thesis students from taking a capstone course or undertaking a traditional internship if they wish to do so.

For M.P.A.-M.S.E.S. students, the M.S.E.S. thesis concentration fulfills the concentration requirement for the M.S.E.S. degree. M.P.A.-M.S.E.S. students must also complete 12 concentration credits from the M.P.A. curriculum, as outlined in the requirements for the M.P.A.-M.S.E.S. degree. Alternatively, students may choose to complete an entire M.P.A. concentration.

Completion of the M.S.E.S. thesis concentration fulfills the capstone and experiential requirements for the M.P.A.-M.S.E.S. dual degree. This does not prevent thesis students from taking a capstone course or undertaking a traditional internship if they wish to do so.

Master of Science in Environmental Science Dual Degree Programs

Master of Science in Environmental Science-Master of Public Affairs (M.S.E.S.-M.P.A.)

Master of Science in Environmental Science–Doctor of Jurisprudence (M.S.E.S.–J.D.)

Master of Science in Environmental Science-Master of Science in Intelligent Systems Engineering (M.S.E.S-M.S.I.S.E)

Master of Science in Environmental Science-Master of Science in Chemistry (M.S.E.S.-M.S.)

Master of Science in Environmental Science–Master of Science in Geological Sciences (M.S.E.S.–M.S.)

Master of Science in Environmental Science–Master of Sciences in Physics (M.S.E.S.-M.S.)

Master of Science in Environmental Science–Doctor of Jurisprudence

The combined Master of Science in Environmental Science–Doctor of Jurisprudence program is a four-year, 115-credit-hour sequence of courses and research that provides depth and breadth in both environmental science and law. Both degrees are awarded when the student meets the degree requirements of the Maurer School of Law and O'Neill.

Application and Admission

The student must have a bachelor's degree in a physical or life science, engineering, or related field. Students interested in the dual M.S.E.S.–J.D. must apply to both the Maurer School of Law and the O'Neill School of Public and Environmental Affairs. Students normally apply to both schools concurrently for the combined program. It is possible, however, for a person already enrolled in the Maurer School of Law to apply for admission to the O'Neill School of Public and Environmental Affairs up to the end of the second year of law study. A student enrolled in O'Neill may seek admission to the Maurer School of Law up to the end of the first year of the M.S.E.S. program

Academic Standing

Grade point averages in the School of Law—Bloomington and O'Neill are computed separately. To continue in the program, the student must meet the academic standards in each school. A student failing in one school but meeting academic standards in the other may complete work for the degree in the school in which academic standards are being met. Such completion must be according to the same conditions required of regular (noncombination) degree candidates; that is, 82 credit hours for law and 48 credit hours for O'Neill. Students are eligible for honors in each school based on the criteria of each school.

Program Advisors

Students enrolled in the combined program are required to have a O'Neill faculty advisor and are encouraged to seek an advisor from the faculty of the Maurer School of Law. The co-advisors can then review and counsel with respect

to each student's course selection for each semester to assure attainment of educational objectives.

School Residency

Students in the dual M.S.E.S.–J.D. program should enroll in courses through O'Neill the first year of their programs and through the Maurer School of Law in the second year of their programs. Alternatively, dual M.S.E.S.–J.D. students have the option of enrolling in courses through the Maurer School of Law in the first year and O'Neill in the second year. In the third and fourth years, or until the dual program is completed, students should enroll through the school in which the majority of their credit hours resides in each enrollment period.

Program Requirements (115 credit hours)

Master of Science in Environmental Science Requirements (36 credit hours)

Students are required to complete 36 credit hours of courses distributed among the environmental science competencies, environmental sciences focus, and a multidisciplinary capstone project.

Environmental Science core competencies (15 credit hours)

Select 15 credit hours in consultation with an advisor:

SPEA-E 512	Risk Communication	(3 cr.)
SPEA-E 518	Vector-based Geographic Information Systems	(3 cr.)
SPEA-E 526	Applied Mathematics for Environmental Science	(3 cr.)
SPEA-E 527	Applied Ecology	(3 cr.)
SPEA-E 529	Applications for Geographic Information Systems	(3 cr.)
SPEA-E 536	Environmental Chemistry	(3 cr.)
SPEA-E 538	Statistics for Environmental Science	(3 cr.)
SPEA-E 560	Environmental Risk Analysis	(3 cr.)
SPEA-P 541	Benefit Cost Analysis	(3 cr.)
SPEA-P 562	Public Program Evaluation	(3 cr.)
SPEA-R 625	Environmental Economics and Policy	(3 cr.)
SPEA-R 643	Natural Resource Management	(3 cr.)
SPEA-V 517	Public Management Economics	(3 cr.)

Environmental Science Focus (18 credit hours)

Select 18 credit hours in consultation with an advisor. Students are required to develop an area of specialization approved by a O'Neill faculty advisor. It is recommended that this be done in consultation with both dual law and environmental science faculty advisors.

Capstone Course (3 credit hours)

select one of the following:

SPEA-E 517	BMP Design for Healthy Urban Watersheds	(3 cr.)
SPEA-E 546	Stream Ecology	(3 cr.)
SPEA-E 560	Environmental Risk Analysis	(3 cr.)
SPEA-E 625	Research in Environmental Science	(3 cr.)
SPEA-V 600	Capstone in Public and Environmental Affairs	(3 cr.)

Doctor of Jurisprudence Requirements (79 credit hours)

Students are required to complete 79 credit hours of law courses and to satisfy all requirements for the degree Doctor of Jurisprudence. For specific requirements, see the Maurer School of Law Bulletin.

Dual M.S.E.S. - M.S. Intelligent Systems Engineering

Master of Science in Environmental Science–Master of Science in Intelligent Systems Engineering (M.S.E.S.–M.S.I.S.E)

Students must earn at least 51 credits in total, including at least 21-credits each in the M.S.E.S. and M.S.I.S.E. programs. The M.S.E.S. and M.S.I.S.E. degrees are awarded concurrently after the student has completed the requirements for both degrees.

MSES Core Requirements (9 credit hours)

These courses establish the fundamental competencies required of environmental engineers and scientists.

The following two courses:

SPEA-E 513	Environmental Project Management	(3 cr.)
SPEA-E 538	Statistics for Environmental Science **OR**	(3 cr.)
SPEA-V 506	Statistical Analysis for Effective Decision Making	(3 cr.)

Note: With demonstration of prior coursework in statistics and/or probability theory, these credits can be replaced with any course from the next list.

Select **one** course from the following list:

SPEA-E 431	Water supply and Wastewater Treatment	(3 cr.)
SPEA-E 515	Fundamentals of Air Pollution	(3 cr.)
SPEA-E 520	Environmental Toxicology	(3 cr.)

SPEA-E 527	Applied Ecology	(3 cr.)
SPEA-E 536	Environmental Chemistry	(3 cr.)
SPEA-E 550	Soil Science and Management	(3 cr.)
SPEA-E 564	Organic Pollutants: Environmental Chemistry and Fate	(3 cr.)
SPEA-E 574	Energy Systems in Transition	(3 cr.)

Economics, Management, and Policy Core Competencies (6 credit hours)

Justification: Courses in this section provide context for environmental and intelligent systems engineering, including how science impacts and is impacted by social, political, and economic systems.

SPEA-E 543	Environmental Management	(3 cr.)
SPEA-E 560	Environmental Risk Analysis	(3 cr.)
SPEA-P 539	Management Science for Public Affairs	(3 cr.)
SPEA-P 541	Benefit Cost Analysis	(3 cr.)
SPEA-R 512	Energy and Climate: Law and Policy	(3 cr.)
SPEA-R 521	Domestic Environmental Policy	(3 cr.)
SPEA-R 531	Water Law	(3 cr.)
SPEA-R 532	Water Policy and Economics	(3 cr.)
SPEA-R 533	Public Natural Resource Law	(3 cr.)
SPEA-R 535	International Environmental Policy	(3 cr.)
SPEA-R 625	Environmental Economics and Policy	(3 cr.)
SPEA-R 643	Natural Resource Management and Policy	(3 cr.)
SPEA-R 645	Environmental Law	(3 cr.)
SPEA-R 674	Energy Economics and Policy	(3 cr.)
SPEA-S 596	Sustainable Development	(3 cr.)
SPEA-V 517	Public Management Economics	(3 cr.)
SPEA-V550	Energy Law and Policy	(3 cr.)
SPEA-X 511	Human Behavior and Energy Consumptions	(3 cr.)

Other SPEA courses may be approved by advisor.

MSISE Core Requirements (7 credit hours)

These courses establish the fundamental competencies required of environmental engineers and scientists.

The following **two** courses:

ENGR-E 500	Introduction to Intelligent Systems Engineering	(1 cr.)
SPEA-E 552	Environmental Engineering	(3 cr.)

Select **one** course from the following list:

ENGR-E 501	Introduction to Computer Engineering	(3 cr.)
ENGR-E 502	Introduction to Cyberphysical Systems	(3 cr.)
ENGR-E 503	Introduction to Intelligent Systems	(3 cr.)
ENGR-E 504	Introduction to Bioengineering	(3 cr.)
ENGR-E 505	Introduction to Nanoengineering	(3 cr.)
ENGR-E 506	Introduction to Neuroengineering	(3 cr.)

MSISE Computing Tools Requirements (3 credit hours)

Familiarity with multiple computing languages and the ability to learn to operate across them is a requisite skillset in this field.

Select at least 3 credits from the following courses:

ENGR-E 501	Introduction to Computer Engineering	(3 cr.)
ENGR-E 502	Introduction to Cyberphysical Systems	(3 cr.)
ENGR-E 503	Introduction to Intelligent Systems	(3 cr.)
ENGR-E 511	Machine Learning and Signal Processing	(3 cr.)
ENGR-E 516	Engineering Cloud Computing	(3 cr.)
ENGR-E 517	High Performance Computing	(3 cr.)
ENGR-E 533	Deep Learning Systems	(3 cr.)
INFO-D 590	Data Science Onramp (variable topics)	(1-3 cr.)
SPEA-E 555	Intro to Coding for Environment and Policy	(1 cr.)

SPEA-E 555	Python Programming for Environment and Policy	(1 cr.)
SPEA-E 555	Using R for Environment and Policy	(1 cr.)

Note: Students may apply for a Computing Tools Waiver based on previously completed coursework or existing expertise, in which case these 3 credits would be replaced by an ENGR course with instructor approval. *Other courses may be approved by advisor.*

Experiential Requirement (0-3 credit hours)

Each candidate for the MS-ES/ISE dual degree program must obtain professionally relevant experience through one of the following options:

1. Approved Internship SPEA-E 589 or ENGR-E 591 (0-3 credit hours)
The student will work with the O'Neill Career Hub to arrange for a suitable internship. Internships vary greatly according to the expectations and requirements of the sponsor. Students are expected to give careful attention in the selection of an internship suitable to their professional goals. Typically, students do not use credit hours for the internship, and as a result, have minimal fees for the experience. However, students who want the additional credit hours can receive up to 3 credit hours for an internship involving the appropriate amount of work; these students will owe fees for the 3 credit hours.
2. Prior Professional Experience (3 credit hours)
Students who have had significant environmental management, computing, technical or design work experience in the past may receive 3 credit hours. To receive 3 credit hours, a student must have a minimum of one year's work experience. Under no circumstances will prior professional experience credit and transfer credit total more than 12 hours. Students receiving prior professional experience credit should carefully plan the balance of their program with their faculty advisors.

Capstone Requirements (3 credit hours)

Each candidate for the MS-ES/ISE dual degree program should take a 3-credit hour course during which they participate in a team to carry out an integrative project that addresses a multidisciplinary problem, or the candidate should conduct a graduate-level research project that culminates in a publication or thesis. Capstone course credit may be double-counted in either Concentration or Tool Skill requirements.

The capstone requirement may be met in one of the following ways:

SPEA-V 600	Capstone in Public and Environmental Affairs (sections with an environmental focus)	(3 cr.)

Or an approved alternative course with a similar structure. Current approved courses include:

SPEA-E 517	BMP Design for Healthy Urban Watersheds	(3 cr.)
SPEA-E 546	Stream Ecology	(3 cr.)
SPEA-E 560	Environmental Risk Analysis	(3 cr.)
ENGR-E 790	ISE Capstone Design I	(3 cr.)
ENGR-E 791	ISE Capstone Design II	(3 cr.)
or	Additional approved courses of a similar format	

MS-ES/ISE DUAL DEGREE CONCENTRATION / TRACK (at least 20 credit hours)

Courses taken for the concentration allow schools to acquire competency in tools, skills, methods, and approaches used in environmental science and intelligent systems engineering. Courses taken to fulfill requirements cannot be "double counted"

SPEA Environmental Science Electives

At least 6 credit hours must be selected from the following:

SPEA-E 514	Changing Landscape of Toxic-Chemical Regulation	(3 cr.)
SPEA-E 517	BMP Design for Healthy Urban Watersheds	(3 cr.)
SPEA-E 518	Vector Based GIS	(3 cr.)
SPEA-E 520	Environmental Toxicology	(3 cr.)
SPEA-E 529	Application of Geographic Information Systems	(3 cr.)
SPEA-E 534	Restoration Ecology	(3 cr.)
SPEA-E 540	Wetlands Ecology and Management	(4 cr.)
SPEA-E 542	Hazardous Materials	(3 cr.)
SPEA-E 545	Lake and Watershed Management	(3 cr.)
SPEA-E 546	Stream Ecology	(3 cr.)
SPEA-E 554	Groundwater Flow Modeling	(3 cr.)
SPEA-E 555	Intro to Coding for Environment and Policy	(1 cr.)
SPEA-E 555	Python Programming for Environment and Policy	(1 cr.)
SPEA-E 555	Using R for Environment and Policy	(1 cr.)
SPEA-E 555	Topics in Environmental Science (approved on an individual	(1-4 cr.)

	basis by an advisor)	
SPEA-E 556	Limnology	(4 cr.)
SPEA- E 560	Environmental Risk Analysis	(3 cr.)
SPEA-E 562	Solid and Hazardous Waste Management	(3 cr.)
SPEA-E 591	Climate Change Impacts on Natural Resources	(3 cr.)

Intelligent Systems Engineering Electives

At least 11 credit hours must be selected from the following:

ENGR-E 501	Introduction to Computer Engineering	(3 cr.)
ENGR-E 502	Introduction to Cyberphysical Systems	(3 cr.)
ENGR-E 503	Introduction to Intelligent Systems	(3 cr.)
ENGR-E 504	Introduction to Bioengineering	(3 cr.)
ENGR-E 505	Introduction to Nanoengineering	(3 cr.)
ENGR-E 506	Introduction to Neuroengineering	(3 cr.)
ENGR-E 510	Engineering Distributed Systems	(3 cr.)
ENGR-E 511	Machine Learning and Signal Processing	(3 cr.)
ENGR-E 512	Advanced Computer Architecture	(3 cr.)
ENGR-E 513	Engineering Compilers	(3 cr.)
ENGR-E 514	Embedded Systems	(3 cr.)
ENGR-E 516	Engineering Cloud Computing	(3 cr.)
ENGR-E 517	High Performance Computing	(3 cr.)
ENGR-E 518	Engineering Networks	(3 cr.)
ENGR-E 519	Engineering Operating Systems	(3 cr.)
ENGR-E 522	Sensors and Remote Sensing	(3 cr.)
ENGR-E 523	Internet of Things	(3 cr.)
ENGR-E 525	Robotics I	(3 cr.)
ENGR-E 531	Physical Optimization	(3 cr.)
ENGR-E 532	Systems Engineering	(3 cr.)
ENGR-E 533	Deep Learning Systems	(3 cr.)
ENGR-E 534	Big Data Applications	(3 cr.)
ENGR-E 537	Rapid Prototyping for Engineering	(3 cr.)
ENGR-E 540	Computational Methods for 3-D Biomaterials	(3 cr.)
ENGR-E 541	Simulating Cancer as an Intelligent System	(3 cr.)
ENGR-E 551	Nanoscale Simulation and Engineering Applications	(3 cr.)
ENGR-E 565	Image Processing for Medical Applications	(3 cr.)
ENGR-E 583	Information Visualization	(3 cr.)
ENGR-E 584	Scientific Visualization	(3 cr.)
ENGR-E 599	Topics in Engineering	(1-3 cr.)

Additional electives that may be used to meet the required total credit hours for the dual degree include any courses listed above not used to satisfy a degree requirement. Additional approved electives are included below from closely related disciplines. Courses not listed may be approved by an advisor with justification.

SPEA non-E courses

SPEA-I 516	Public Management Information Systems	(3 cr.)
SPEA-I 519	Database Management Systems	(3 cr.)
SPEA-I 611	Design of Information Systems	(3 cr.)
SPEA-I 613	Implementation of Information Systems	(3 cr.)
SPEA-P 507	Data Analysis and Modeling for Public Affairs	(3 cr.)

Geography courses

GEOG-G 532	Physical Climatology	(3 cr.)
GEOG-G 538	Geographic Information Systems	(3 cr.)
GEOG-G 588	Applied Spatial Statistics	(3 cr.)

Earth and Atmospheric Sciences courses

EAS-G 514	Geophysical Signal Analysis	(3 cr.)

EAS-G 534	Dynamic Meteorology: Synoptic to Global Scale	(3 cr.)
EAS-G 538	Air Pollution Meteorology	(3 cr.)
EAS-G 540	Physical Meteorology and Climatology	(3 cr.)
EAS-G 547	Instrumentation for Atmospheric Science	(3 cr.)
EAS-G 548	Sustainable Energy Systems	(3 cr.)
EAS-G 559	Earth Surface Processes	(3 cr.)
EAS-G 564	Dynamic Meteorology: Boundary-layer Meteorology	(3 cr.)
EAS-G 576	Climate Change	(3 cr.)
EAS-G 594	Numerical Weather Prediction	(3 cr.)
EAS-G 612	Inverse Methods in Geophysics	(2 cr.)
EAS-G 690	Advanced Geology Seminar, Mathematical Modeling in the Geosciences	(3 cr.)

Biology / Biotech courses

BIOL-B 572	Photobiology	(3 cr.)
BIOL-L 510	Introduction to the Research Laboratory	(3 cr.)
BIOL-L 519	Bioinformatics: Theory and Application	(3 cr.)
BIOL-L 522	Advanced Eukaryotic Molecular Genetics	(3 cr.)
BIOL-L 523	Critical Analysis of the Scientific Literature	(1-6 cr.)
BIOL-L 560	Physiological Ecology	(3 cr.)
BIOL-L 572	Microbial Ecology	(3 cr.)
BIOL-L 575	Ecosystem Structure and Function	(3 cr.)
BIOL-L 577	Theoretical Ecology	(3 cr.)
BIOL-M 511	Molecular Biology of Prokaryotes	(3 cr.)

Informatics courses

INFO-D 590	Data Science Onramp (variable topics)	(1-3 cr.)
INFO-I 400/I590	Environmental Policy, Health & Design	(3 cr.)
INFO-I 590	Smart Cities	(3 cr.)

Information and Library Science courses

ILS-Z 503	Representation and Organization	(3 cr.)
ILS-Z 510	Introduction to Information Studies	(3 cr.)
ILS-Z 511	Database Design	(3 cr.)
ILS-Z 512	Information Systems Design	(3 cr.)

Mathematics courses

MATH-M 511/M 512	Real Variable I & II	(3 cr.)
MATH-M 513/M 514	Complex Variables I & II	(3 cr.)
MATH-M 540/M 541	PDEs I & II	(3 cr.)
MATH-M 544/M 545	ODEs I & II	(3 cr.)
MATH-M 571/M 572	Numerical Methods I & II	(3 cr.)
MATH-M 671/M 672	Numerical Differential and Integral Equations I & II	(3 cr.)

Physics courses

PHYS-P 555	Quantum Computation and Information	(3 cr.)
PHYS-P 582	Biological and Artificial Neural Networks	(3 cr.)
PHYS-P 583	Signal Processing and Information Theory in Biology	(3 cr.)
PHYS-P 609	Computational Physics	(3 cr.)
PHYS-P 610	Computational Physics II	(3 cr.)

Statistics courses

STAT-S 501	Statistical Methods I	(3 cr.)
STAT-S 503	Statistical Methods II	(3 cr.)
STAT-S 520	Introduction to Statistics	(3 cr.)
STAT-S 611	Statistical Computing	(3 cr.)

Chemistry courses

CHEM-C 501	Chemical Instrumentation	(3 cr.)
CHEM-C 503	Sptrometric Methods of Structure Determination	(3 cr.)
CHEM-C 540	Advanced Organic Chemistry	(3 cr.)
CHEM-C 565	Nuclear Chemistry	(3 cr.)
CHEM-C 566	Molecular Optical Spectroscopy	(3 cr.)
CHEM-C 567	Chmeical Statistical Mechanics	(3 cr.)
CHEM-C 572	Computational Chemistry and Molecular Modeling	(3 cr.)
CHEM-C 611	Electroanalytical Chemistry	(1.5-3 cr.)
CHEM-C 612	Spectrochemical Methods of Analysis	(1.5-3 cr.)
CHEM-C 613	Mass Spectrometryand Staple Isotopes	(1.5-3 cr.)
CHEM-C 614	Chromatography	(1.5-3 cr.)
CHEM-C 616	Surface Analysis and Surface Chemistry	(1.5 cr.)
CHEM-C 633	Inorganic Chemistry of Main Group Elements	(2 cr.)
CHEM-C 634	Transition Metal Chemistry	(3 cr.)

Dual M.S.E.S. - M.S. in Chemistry

Master of Science in Environmental Science–Master of Science in Chemistry (M.S.E.S.–M.S.)
Department of Chemistry

Students in the MSES-MS Chemistry program take 51 credit hours (of which, at least 21 credits must be from both O'Neill and Chemistry). Note that double counting of courses among components is permitted, so long as overall credit requirements are met.

Chemistry Core (9 credit hours)

In consultation with an advisor, select 3 courses from the following list:

CHEM-C 503	Methods of Structure Determination	(3 cr.)
CHEM-C 540	Advanced Organic Chemistry	(3 cr.)
CHEM-C 565	Nuclear Chemistry	(3 cr.)
CHEM-C 566	Spectroscopy	(3 cr.)
CHEM-C 567	Statistical Mechanics	(3 cr.)
CHEM-C 572	Computational Chemistry and Molecular Modeling	(3 cr.)
CHEM-C 611	Electroanalytical Chemistry	(1.5-3 cr.)
CHEM-C 613	Mass Spectrometry	(1.5-3 cr.)
CHEM-C 614	Chromatography	(1.5-3 cr.)
CHEM-C 616	Surface Analysis and Surface Chemistry	(1.5-3 cr.)
CHEM-C 633	Inorganic Chemistry of Main Group Elements	(3 cr.)
CHEM-C 634	Transition Metal Chemistry	(3 cr.)

Environmental Science Core Competencies (9 credit hours)

In consultation with an advisor, select three courses from the following list:

SPEA-E 515	Fundamentals of Air Pollution	(3 cr.)
SPEA-E 526	Applied Mathematics for Environmental Science	(3 cr.)
SPEA-E 527	Applied Ecology	(3 cr.)
SPEA-E 536	Environmental Chemistry	(3 cr.)
SPEA-E 538	Statistics for Environmental Science	(3 cr.)
SPEA-E 539	Aquatic Chemistry	(3 cr.)
SPEA-E 552	Environmental Engineering	(3 cr.)
SPEA-E 564	Organic Pollutants: Environmental Chemistry and Fate	(3 cr.)
SPEA-E 570	Environmental Soil Science	(3 cr.)

Eonomics, Management, and Policy Core Competencies (Typically 6-9 credit hours)

Students are encouraged to acquire competency in these areas of environmental management. The selection of courses will vary according to the student's professional objectives and an advisor can approve alternative courses that may be relevant.

SPEA-E 543	Environmental Management	(3 cr.)
SPEA-E 574	Energy Systems in Transition	(3 cr.)
SPEA-R 535	International Environmental Policy	(3 cr.)
SPEA-R 625	Environmental Economics and Policy	(3 cr.)

SPEA-R 643	Natural Resource Management and Policy	(3 cr.)
SPEA-R 645	Environmental Law	(3 cr.)
SPEA-R 674	Energy Economics and Policy	(3 cr.)
SPEA-S 596	Sustainable Development	(3 cr.)
SPEA-V 517	Public Management Economics	(3 cr.)

Tool Skills Courses (3 credit hours)
Students are encouraged to acquire competency in analytical methods by focusing on tool skills appropriate to their professional objectives.

SPEA-E 512	Risk Communication	(3 cr.)
SPEA-E 518	Vector-based Geographic Information Systems	(3 cr.)
SPEA-E 529	Application of Geographic Information Systems	(3 cr.)
SPEA-E 538 / SPEA-V 506	Statistics for Environmental Science	(3 cr.)
SPEA-E 554	Groundwater Flow Modeling	(3 cr.)
SPEA-E 560	Environmental Risk Analysis	(3 cr.)
SPEA-M 547	Negotiation and Dispute Resolution for Public Affairs	(3 cr.)
SPEA-P 507	Data Analysis and Modeling for Public Affairs	(3 cr.)
SPEA-P 539	Management Science for Public Affairs	(3 cr.)
SPEA-P 541	Benefit-Cost Analysis	(3 cr.)
SPEA-P 562	Public Program Evaluation	(3 cr.)
CHEM-C 501	Chemical Instrumentation	(4 cr.)
CHEM-C 503	Methods of Structure Determination	(3 cr.)
CHEM-C 565	Nuclear Chemistry	(3 cr.)
CHEM-C 566	Spectroscopy	(3 cr.)
CHEM-C 567	Statistical Mechanics	(3 cr.)
CHEM-C 572	Computational Chemistry and Molecular Modeling	(3 cr.)
CHEM-C 611	Electroanalytical Chemistry	(1.5-3 cr.)
CHEM-C 613	Mass Spectrometry	(1.5-3 cr.)
CHEM-C 615	Bioanalytical Chemistry	(1.5-3 cr.)
CHEM-C 616	Surface Analysis and Surface Chemistry	(1.5-3 cr.)

Dual Program Capstone (3 credit hours)
Each candidate for the MSES-MS in Chemistry dual degree program should take a 3-credit hour course during which they participate in a team to carry out an integrative project that addresses a multidisciplinary problem, or the candidate should conduct a graduate-level research project that culminates in a publication or thesis (theses will be formatted according to Chemistry Department requirements). Capstone course credit may be double-counted in either Concentration or Tool Skill requirements.

The capstone requirement may be met in one of the following ways:

SPEA-V 600	Capstone in Public and Environmental Affairs	(3 cr.)
SPEA-E 560	Environmental Risk Analysis (or an approved alternative course with a similar structure)	(3 cr.)
Master's Thesis	(Completed under the supervision of a graduate faculty member, overseen and approved by a graduate committee consisting of the research advisor and one of the advisors for the dual degree program, or a publication resulting from similar research).	(3 cr.)

Experiential Requirement (0-3 credit hours)
Each candidate for the MSES-MS in Chemistry dual degree program must obtain professionally relevant experience through one of the following options:

1. Approved Internship (0-3 credit hours)
The student will work with the O'Neill Career Hub to arrange for a suitable internship. Internships vary greatly according to the expectations and requirements of the sponsor. Students are expected to give careful attention in the selection of an internship suitable to their professional goals. Typically, students do not use credit hours for the internship, and as a result, have minimal fees for the experience. However, students who want the additional credit hours can receive up to 3 credit hours for an

internship involving the appropriate amount of work; these students will owe fees for the 3 credit hours.
2. Prior Experience (3 credit hours)
3. Three credits of research experience in the laboratory of a graduate faculty member
Graduate research course numbers are, in the Chemistry department, CHEM-C 8X0 and in the MSES, SPEA-E 625. More involved research projects that culminate in a thesis or publication can be applied toward the capstone course requirement (see above).

Environmental Chemistry, Toxicology, and Risk Assesment Concentration (15-18 credit hours)

This concentration addresses the fate and transport of chemicals in the environment and the hazards and risks to human health and the environment associated with chemical pollution. Courses on the chemical/physical/biological reactions of pollutants in soil, aquatic, and atmospheric systems are included. Additional courses study the hazards associated with chemicals used in modern society, technologies available to manage and remediate contaminated sites, the toxicological effects of chemical exposure, and methods to assess risks associated with chemicals in the environment.

***At least two courses should be selected from the Chemistry Department and at least two courses should be selected from O'Neill. An advisor can approve alternative courses that may be relevant.*

SPEA-E 515	Fundamentals of Air Pollution	(3 cr.)
SPEA-E 520	Environmental Toxicology	(3 cr.)
SPEA-E 537	Environmental Chemistry Laboratory	(3 cr.)
SPEA-E 539	Aquatic Chemistry	(3 cr.)
SPEA-E 542	Hazardous Materials	(3 cr.)
SPEA-E 554	Groundwater Flow Modeling	(3 cr.)
SPEA-E 560	Environmental Risk Analysis	(3 cr.)
SPEA-E 562	Solid and Hazardous Waste Management	(3 cr.)
SPEA-E 591	Climate Change Impacts on Natural Resources	(3 cr.)
CHEM-C 581	Macromolecular Structure and Interactions	(1.5 cr.)
CHEM-C 632	Structure, Function, and Spectroscopy of Metal Ions in Biological Systems	(3 cr.)
CHEM-C 634	Transition Metal Chemistry	(3 cr.)
CHEM-C 636	Organometallic Chemistry and Catalysis	(3 cr.)
CHEM-M 501	Nanomaterials	(3 cr.)
CHEM-M 503	Supramolecular Chemistry	(3 cr.)
EAS-G 576	Climate Change	(3 cr.)
GEOG-G 532	Physical Climatology	(3 cr.)

Dual M.S.E.S.-M.S. in Geological Sciences

Master of Science in Environmental Science–Master of Science in Geological Sciences (M.S.E.S.–M.S.)
Department of Earth and Atmospheric Sciences

Students must earn at least 51 credits in total, including a minimum of 21 credit hours in the Department of Earth and Atmospheric Sciences as well as in the O'Neill School of Public and Environmental Affairs. Note that double-counting of courses among components is permitted, so long as overall credit requirements are met. In double-counting, multiple requirements may be met by a single course, but credits only count once towards credit totals. Degrees are awarded concurrently after the student has completed the requirements for both degrees.

Program Requirements (51 credit hours)

The combined M.S. in Geological Sciences–MSES program requires a minimum of 51 credit hours distributed among six components:

- Geological Sciences Core
- Environmental Science Core
- Economics, Policy, and Law Competencies
- Tool Skills
- Dual Geological Sciences-Environmental Science Concentration
- an experiential component or an environmentally focused thesis project

The student must complete a minimum of 21 credit hours in the Department of Earth & Atmospheric Sciences as well as in the O'Neill School of Public and Environmental Affairs. Note that double-counting of courses among components is permitted, so long as overall credit requirements are met. In double-counting, multiple requirements may be met by a single course, but credits only count once towards credit totals.

Geological Sciences Core (9 credit hours)

Select course from the following list:

EAS-X 429	Field Geology in the Rocky Mountains	(6 cr.)
EAS-G 513	Seismology I	(3 cr.)
EAS-G 517	Optical Mineralogy	(3 cr.)
EAS-G 520	Mechanics for the Earth Sciences	(1 cr.)
EAS-G 524	Carbonate Facies and Environments	(3 cr.)
EAS-G 554	Fundamentals of Plate Tectonics	(3 cr.)
EAS-G 559	Earth Surface Processes	(3 cr.)
EAS-G 561	Paleoecology	(3 cr.)
EAS-G 572	Basin Analysis and Hydrocarbons	(3 cr.)

EAS-G 576	Climate Change Science	(3 cr.)
EAS-G 581	Surficial Geology	(3 cr.)
EAS-G 583	Isotope Geochemistry	(3 cr.)
EAS-G 589	Geomicrobiology	(3 cr.)
EAS-G 591	Physical Sedimentology	(3 cr.)

Environmental Science Core (9 credit hours)
Select three courses from the following list:

SPEA-E 515	Fundamentals of Air Pollution	(3 cr.)
SPEA-E 526	Applied Mathematics for Environmental Science	(3 cr.)
SPEA-E 527	Applied Ecology	(3 cr.)
SPEA-E 536	Environmental Chemistry	(3 cr.)
SPEA-E 538	Statistics for Environmental Science	(3 cr.)
SPEA-E 539	Aquatic Chemistry	(3 cr.)
SPEA-E 552	Environmental Engineering	(3 cr.)
SPEA-E 564	Organic Pollutants: Environmental Chemistry and Fate	(3 cr.)

Eonomics, Management, and Policy Core Competencies (6-9 credit hours)
Students are encouraged to acquire competency in these areas of environmental management. The selection of courses will vary according to the student's professional objectives and an advisor can approve alternative courses that may be relevant.

SPEA-E 513	Environmental Project Management	(3 cr.)
SPEA-E 543	Environmental Management	(3 cr.)
SPEA-P 507	Data Analysis and Modeling for Public Affairs	(3 cr.)
SPEA-P 541	Benefit Cost Analysis	(3 cr.)
SPEA-R 512	Energy and Climate: Law and Policy	(3 cr.)
SPEA-R 521	Domestic Environmental Policy	(3 cr.)
SPEA-R 531	Water Law	(3 cr.)
SPEA-R 532	Water Policy and Economics	(3 cr.)
SPEA-R 535	International Environmental Policy	
SPEA-R 564	Environmental and Natural Resource Policy Design and Implementation	(3 cr.)
SPEA-R 625	Environmental Economics and Policy	(3 cr.)
SPEA-R 626	Energy Policy Seminar	(3 cr.)
SPEA-R 643	Natural Resource Management and Policy	(3 cr.)
SPEA-R 645	Environmental Law	(3 cr.)
SPEA-R 674	Energy Economics and Policy	(3 cr.)
SPEA-S 596	Sustainable Development	(3 cr.)
SPEA-V 517	Public Management Economics	(3 cr.)

Tool Skill Courses (3-6 credit hours)
Students are encouraged to acquire competency in analytical methods by focusing on tool skills appropriate to their professional objectives. Students pursuing the research option (see below) may use research-course credits to satisfy the Tools requirement, if appropriate.

SPEA-E 518	Vector-based Geographic Information Systems	(3 cr.)
SPEA-E 529	Applications of Geographic Information Systems	(3 cr.)
SPEA-E 538	Statistics for Environmental Science	(3 cr.)
SPEA-E 554	Groundwater Flow Modeling	(3 cr.)
SPEA-E 560	Environmental Risk Analysis	(3 cr.)
SPEA-P 507	Data Analysis and Modeling for Public Affairs	(3 cr.)
SPEA-P 539	Management Science for Public Affairs	(3 cr.)
SPEA-P 541	Benefit Cost Analysis	(3 cr.)
SPEA-P 562	Public Program Evaluation	(3 cr.)
EAS-G 520	Mechanics for Earth Sciences	(3 cr.)
EAS-G 562	Geometric Morphometrics	(3 cr.)
EAS-G 563	Quantitative Paleontology	(3 cr.)
EAS-G 582	Computational Methods for Earth Scientists	(3 cr.)

EAS-G 583	Isotope Geochemistry	(3 cr.)
EAS-G 586	Geochemical Modeling	(3 cr.)
EAS-G 612	Inverse Methods in Geophysics	(3 cr.)
EAS-G 685	Evolution of Ecosystems	(3 cr.)

Dual Geological Sciences – Environmental Science Master's Concentration

Required Courses (Typically 15 to 18 credit hours)

This concentration supports the Geological Sciences and MSES degrees with courses in laboratory and environmental chemistry, toxicology, and risk assessment, as well as energy-related courses. Courses taken to satisfy the core requirements may not also satisfy concentration requirements. Students pursuing the research option (see below) may use research-course credits to satisfy part of the concentration requirement.

At least two courses should be selected from the Earth & Atmospheric Sciences Department and at least two courses should be selected from the O'Neill School. An advisor can approve alternative courses that may be relevant.

SPEA-E 512	Risk Communication	(3 cr.)
SPEA-E 514	Changing Landscape of Toxic-Chemical Regulation	(3 cr.)
SPEA-E 515	Fundamentals of Air Pollution	(3 cr.)
SPEA-E 517	BMP Design for Healthy Urban Watersheds	(3 cr.)
SPEA-E 520	Environmental Toxicology	(3 cr.)
SPEA-E 536	Environmental Chemistry	(3 cr.)
SPEA-E 539	Aquatic Chemistry	(3 cr.)
SPEA-E 542	Hazardous Materials	(3 cr.)
SPEA-E 544	Subsurface Microbiology and Bioremediation	(3 cr.)
SPEA-E 545	Lake and Watershed Management	(3 cr.)
SPEA-E 552	Environmental Engineering	(3 cr.)
SPEA-E 554	Groundwater Flow Modeling	(3 cr.)
SPEA- E 560	Environmental Risk Analysis	(3 cr.)
SPEA-E 562	Solid and Hazardous Waste Management	(3 cr.)
SPEA-E 564	Organic Pollutants: Environmental Chemistry and Fate	(3 cr.)
SPEA-E 574	Energy Systems in Transition	(3 cr.)
SPEA-E 591	Climate Change Impacts on Natural Resources	(3 cr.)
EAS-G 532	Physical Climatology	(3 cr.)
EAS-G 551	Physical Hydrology	(3 cr.)
EAS-G 559	Earth Surface Processes	(3 cr.)
EAS-G 561	Paleoecology	(3 cr.)
EAS-G 572	Basin Analysis and Hydrocarbons	(3 cr.)
EAS-G 576	Climate Change Science	(3 cr.)
EAS-G 581	Surficial Geology	(3 cr.)
EAS-G 583	Isotope Geochemistry	(3 cr.)
EAS-G 588	Paleobiogeography	(3 cr.)
EAS-G 589	Geomicrobiology	(3 cr.)
EAS-G 685	Evolution of Ecosystems	(3 cr.)

Capstone Course (3 credit hours) Professional-Degree students

Each candidate for the M.S. in Geological Sciences-M.S.E.S. dual degree program should take a 3-credit hour course during which they participate in a team to carry out an integrative project that addresses a multidisciplinary problem. Capstone course credit may be double-counted in either Concentration or Tool Skill requirements, if appropriate. The capstone requirement may be met in one of the following ways:

1. SPEA-V 600 Capstone in Public and Environmental Affairs, sections with an environmental focus.
2. An approved alternative course with a similar structure, such as SPEA-E 517 BMP Design for Healthy Urban Watersheds, SPEA-E 560 Environmental Risk Analysis, EAS-G 690 Environmental & Energy Diplomacy, or other approved course.

Experiential Requirement (0-3 credit hours) Professional-Degree Students

Each candidate for the M.S. in Geological Sciences-MSES dual-degree program must obtain professionally relevant experience through one of the following options.

1. Approved Internship (0-3 credit hours) The student will work with the O'Neill Career Hub and the Department of Earth & Atmospheric Sciences to arrange for a suitable internship. Internships vary greatly according to the expectations and requirements of the sponsor. Students are expected to give careful attention in the selection of an internship suitable to their professional goals. Typically, students do not use credit hours for the internship, and as a result, have no fees for the experience. However, students who want the

additional credit hours can receive up to 3 credit hours for an internship involving the appropriate amount of work; these students will owe fees to the relevant school for the 3 credit hours.

2. Professional Experience (3 credit hours)
Students who have had significant environmental management, technical or administrative work experience in the past may receive 3 credit hours. Students must apply to receive Professional Experience credit and their experience must meet O'Neill guidelines. Professional experience credit and transfer credit, together, may not total more than 18 hours. Students receiving prior professional experience credit should carefully plan the balance of their program with their faculty advisors.

Research Requirement (6-9 credit hours) Research-Option Students

Candidates choosing to focus primarily on research may replace the capstone experience with a graduate-level research project that culminates in a master's thesis (following EAS thesis or report option definition but not O'Neill thesis definition) or research project. The research/thesis may be directed by a member of the graduate faculty from either the Department of Earth & Atmospheric Sciences or the O'Neill School, but the advisory committee must include at least one member from both departments. Up to nine hours of research, either from EAS-G 810 or SPEA-E 625, may be counted in either the Concentration or Tool Skill requirements as appropriate. The capstone and experiential (internship) requirements are waived for students taking the research option.

Dual M.S.E.S.-M.S. in Physics

Master of Science in Environmental Science–Master of Science in Physics (M.S.E.S.-M.S.)
Department of Physics

This dual master's program is a 51-credit hour (two-year) program that gives the student more depth and breadth than is possible in a single degree. The student must complete a minimum of 21 credit hours in each of the degree programs. M.S. in Physics and M.S.E.S. degrees are awarded concurrently after the student has completed the requirements for both degrees.

Application, Admission, and Degree Planning

The student must apply to the Department of Physics and be accepted into the MS in Physics degree program and apply to the O'Neill School of Public and Environmental Affairs (SPEA) and be accepted into the Master of Science in Environmental Science (MSES) degree program. The students must design their dual-degree curriculum in consultation with the graduate advisor of the Physics Department and the program director for the MSES program in O'Neill. Both must approve the course choices on a semester-by-semester basis. The students will use a multi-semester planning form and a degree program checklist for this purpose; a blank copy of each is attached to this proposal. The dual-degree program is designed to be completed in two (2) years, but must be completed within six (6) years.

Physics MS admissions requirements:
Physics P221, P222, P301 (or equivs)
Math M211,212,311 (or equivs)

O'Neill MSES admissions requirements:
Differential and integral calculus - Math M211 or equivalent
One semester of inorganic chemistry with lab - C103 or C117 and C127, or equivalent

Requirements
The dual M.S. in Physics and M.S.E.S. in the O'Neill program requires a minimum of 51 credit hours distributed among six components: physics core; O'Neill core; economics, policy, and law competencies; tool skills; a physics or O'Neill concentration; and professional experience. At least 2 of the physics courses must be at 500-level or higher. Details provided below.

Physics Core (9 credit hours)

Choose three of the following (core choices may not double count in the concentration)

PHYS-P 331	Theory of Electricity and Magnestism I	(3 cr.)
PHYS-P 340	Thermodynamics and Statistical Mechanics	(3 cr.)
PHYS-P 350	Applied Physics Instrumentation Lab	(3 cr.)
PHYS-P 453	Introduction to Quantum Mechanics	(3 cr.)
PHYS-P 454	Modern Physics	(3 cr.)
PHYS-P 460	Modern Optics	(3 cr.)
PHYS-P 510	Environmental Physics (credit not given for both P 510 and E 574 within a student's program)	(3 cr.)
PHYS-P 511	Quantum Mechanics	(3 cr.)
PHYS-P 551	Modern Physics Laboratory	(3 cr.)
PHYS-P 556	Statistical Physics	(3 cr.)
PHYS-P 575	Introduction to Biophysics	(3 cr.)

O'Neill Core (9 credit hours)

Choose three of the following (core choices may not double count in the concentration)

SPEA-E 515	Fundamentals of Air Pollution	(3 cr.)
SPEA-E 536	Environmental Chemistry	(3 cr.)
SPEA-E 538	Statistics for Environmental Science	(3 cr.)
SPEA-E 552	Environmental Engineering	(3 cr.)
SPEA-E 574	Energy Systems in Transition (credit will not be given for both E574 and P510 within	(3 cr.)

	a given student's program)	

O'Neill Economics, Management, and Policy Competency (6 credit hours)

SPEA-E 513	Enivornmental Project Management	(3 cr.)
SPEA-E 543	Environmental Management	(3 cr.)
SPEA-R 532	Water Policy and Economics	(3 cr.)
SPEA-R 625	Environmental Economics and Policy	(3 cr.)
SPEA-R 645	Environmental Law	(3 cr.)
SPEA-R 674	Energy Economics and Policy	(3 cr.)
SPEA-S 596	Sustainable Development	(3 cr.)
SPEA-V 517	Public Management Economics	(3 cr.)
SPEA-V 550	Energy Law	(3 cr.)

Other courses may be approved by the O'Neill advisor

Tool Skill Courses (Typically 3–6 credit hours)

Students are encouraged to acquire competency in analytical methods by focusing on tool skills appropriate to their professional objectives. Courses should be selected in consultation with faculty advisors from both programs. Tool skill courses may double count with the concentration, but degree credit totals must still be met.

PHYS-P 540	Analog and Digital Electronics	(3 cr.)
PHYS-P 548	Mathematical Methods for Biology	(3 cr.)
PHYS-P 583	Signal Processing and Information Theory in Biology	(3 cr.)
PHYS-P 609	Computational Physics	(3 cr.)
SPEA-E 518	Vector-based Geographic Information Systems	(3 cr.)
SPEA-E 529	Application of Geographic Information Systems	(3 cr.)
SPEA-E 554	Groundwater Flow Modeling	(3 cr.)
SPEA-E 560	Environmental Risk Analysis	(3 cr.)
SPEA-P 507	Data Analysis and Modeling for Public Affairs	(3 cr.)
SPEA-P 541	Benefit Cost Analysis	(3 cr.)
SPEA-P 562	Public Program Evaluation	(3 cr.)

Other courses may be approved by the O'Neill advisor

Capstone course (3 credit hours)

Students must enroll in a 3-credit O'Neill capstone course (SPEA-V 600 – only environmentally-oriented sections as approved by the O'Neill program director, SPEA-E 560 Environmental Risk Analysis, or SPEA-E 517 Best Management Practices for Healthy Urban Watersheds). The capstone course may double-count in concentration, if desired, but degree totals must still be met. The capstone requirement may be waived for students who apply for Professional Experience credit.

Experiential Requirement (0-3 credit hours)

1. Approved internship (SPEA-E 589)
2. MS research (PHYS-P 802) or MSES research internship (SPEA-E 589)

The experiential requirement may be waived for students who file for Professional Experience credit.

Physics-O'Neill Concentration (21 credit hours)

Must include at least 6 credit hours from Physics and at least 6 credit hours from O'Neill. Remaining courses to be chosen from graduate classes from either unit, with advisors' consent.

O'Neill concentration options

Any O'Neill core course from the list above that was not used for core credit.

SPEA-E 501	Human Behavior and Energy Consumption	(3 cr.)
SPEA-E 505	Renewable and Nuclear Energy and Climate Change	(3 cr.)
SPEA-E 514	Changing Landscape of Toxic-Chemical Regulation	(3 cr.)
SPEA-E 517	BMP Design for Healthy Urban Watersheds	(3 cr.)
SPEA-E 518	Vector-based Geographic Information Systems	(3 cr.)
SPEA-E 520	Environmental Toxicology	(3 cr.)
SPEA-E 539	Aquatic Chemistry	(3 cr.)
SPEA-E 542	Hazardous Materials	(3 cr.)
SPEA-E 554	Groundwater Flow Modeling	(3 cr.)
SPEA-E 555	Intro to Coding for Environment and Policy	(1 cr.)
SPEA-E 555	Python Programming for Environment and Policy	(1 cr.)

SPEA-E 555	Using R for Environment and Policy	(1 cr.)
SPEA-E 555	Watershed Hydrology	(3 cr.)
SPEA-E 560	Environmental Risk Analysis	(3 cr.)
SPEA-E 562	Solid and Hazardous Waste Management	(3 cr.)
SPEA-E 564	Organic Pollutants: Environmental Chemistry and Fate	(3 cr.)
SPEA-E 591	Climate Change Impacts on Natural Resources	(3 cr.)

Physics concentration options

PHYS-P 508	Current Research in Physics	(3 cr.)
PHYS-P 510	Environmental Physics	(3 cr.)
PHYS-P 551	Modern Physics LaboratoryStatistical Physics	(3 cr.)
PHYS-P 556	Statistical Physics	(3 cr.)
PHYS-P 557	Solid State Physics	(3 cr.)
PHYS-P 572	Radiation Oncology Physics	(3 cr.)
PHYS-P 578	Radiation BiophysicsModeling and Computation in Biophysics	(3 cr.)
PHYS-P 581	Signal Processing and Information Theory in Biology	(3 cr.)
PHYS-P 583	Signal Processing and Information Theory in Biology	(3 cr.)
PHYS-P 609	Computational Physics	(3 cr.)

Concentration options from other departments

GEOG-G 551	Physical hydrology	(3 cr.)

Other courses from Physics, O'Neill, (including research courses SPEA-E 625 or PHYS-P 802 or other departments may be used in the concentration with approval of both advisors.

Master of International Affairs Joint Degree

The Master of International Affairs (MIA) degree program is an intensive one-year, 36-credit-hour program. This degree is offered jointly between the Paul H. O'Neill School of Public and Environmental Affairs (O'Neill) and the Hamilton-Lugar School of Global and International Studies (HLS) at Indiana University Bloomington. We provide an education that provides students the skills necessary to work effectively in global institutions across the public, private, and non-profit sectors; an overview of contemporary and historical efforts to create effective institutions of governance across borders; and in-depth knowledge of pivotal fields within international affairs. This degree program includes 15 core credit hours, 12 concentration credit hours, and 9 elective credit hours. Students must complete at least 15 credit hours in each O'Neill and HLS, with the remaining 6 credits being from either school or other academic units at IUB in graduate level courses that have either been preapproved or require program director and instructor approval to enroll.

MIA Requirement I: International Affaris Core (15 credit hours)

The MIA core courses ensure that students acquire essential competence in understanding the global governance system, statistics, economics, policy analysis, and management.

NOTE: Each listed course is worth 3 credit hours unless indicated otherwise.

INTL-I 520	History of the International System	(3 cr.)
INTL-I 521	Global Governance and International Organizations	(3 cr.)
INTL-I 524	Practicum in International Policy Analysis	(3 cr.)
SPEA-D 577	International Economics Strategies and Trade Policy	(3 cr.)
SPEA-V 506	Statistical Analysis for Effective Decision Making	(3 cr.)

MIA Requirement II: Concentration (12 credit hours)

MIA students must complete a concentration. They must select one of the three (3) concentrations described in the pages that follow. Students should confer with the MIA program directors prior to course registration. Some students choose to develop a "Specialized Concentration".# In this case, students should work closely with a program director to develop a cohesive design for consideration and final approval.

MIA Requirement III: Electives (9 credit hours)

Students can choose any of the graduate-level courses offered by O'Neill or HLS. Additionally, the following courses are preapproved: POLS-Y 569 International Relations: Approaches and Issues, ECON-E 501 Economic Development, and ECON-E 501 International Trade. Possible options would include language and/or culture courses at HLS, or further studies in O'Neill-related subject areas. Students may take up to six credits in graduate level courses offered by other academic units at IUB. These courses vary from semester to semester. Contact the program director to learn more about which courses are offered that have already been preapproved. Students interested in taking a graduate level course not on this list must get approval from the Faculty Program Director.

Note - The internship credit-hours may be increased to 6 hours for longer, or more intensive internship experiences, with the recommendation of the student's advisor and approval of the MIA Program Director.

Students may receive one of the following concentrations, depending on choice of electives:

- Security, Diplomacy and Governance
- Finance and Trade
- Global Development, Environment, and Sustainability
- With the permission of the MIA Program Director, students may design their own concentration (this option is intended to be rarely exercised)

Choose from the following concentrations:

Security, Diplomacy, and Governance Concentration Core Course (3 cr.)

INTL-I 523	International Security Regimes	(3 cr.)

Electives (9 cr.)

Choose three courses from the following list:

CEUS-R 515	Politics & Society in Central Asia	(3 cr.)
EALC-E 592	Political Economy of East Asia	(3 cr.)
INTL-I 500	After Atrocities Reconstructing the Peace	(3 cr.)

INTL-I 500	Ocean Governance	(3 cr.)
INTL-I 506	Women and War	(3 cr.)
INTL-I 510	Violence Against Civilians in War	(3 cr.)
INTL-I 525	International Climate Governance	(3 cr.)
INTL-I 545	Practicum in Human Rights Law and International Organizations	(1-6 cr.)
SPEA-D 548	US Foreign Policy & Third World Regimes	(3 cr.)
SPEA-D 583	Conflict and Development	(3 cr.)
SPEA-M 547	Negotiation and Dispute Resolution for Public Affairs	(3 cr.)
SPEA-M 575	Comparative Public Management & Administration	(3 cr)
SPEA-N 524	Civil Society in Comparative Perspective	(3 cr)
SPEA-N 534	NGO Management for International Development	(3 cr)
SPEA-V 535	Managing and Leading in Public Affairs	(3 cr.)
SPEA-V 550	Latin American Governance	(3 cr)
SPEA-V 550	Global Governance	(3 cr)
SPEA-V 550	Homeland Security	(3 cr.)

Finance and Trade Concentration Core Course (3 cr.)

SPEA-D 573	Development Economics	(3 cr.)

Electives (9 cr.)

Choose three courses from the following list:

CEUS-R 527	Post-Soviet Central Asia Politics, Economy and Foreign Policy	(3 cr.)
EALC-E 592	Political Economy of East Asia	(3 cr.)
EALC-E 593	China's Political Economy	(3 cr.)
EURO-W 501	The Economics of European Integration	(3 cr.)
INTL-I 503	Harnessing Foreign Investment for Development	(3 cr.)
SPEA-D 578	Introduction to Comparative and International Affairs	(3 cr.)
SPEA-D 669	Economic Development, Globalization and Entrepreneurship	(3 cr.)
SPEA-E 574	Energy Systems in Transition	(3 cr.)
SPEA-F 584	Tax Policy in Developing Countries	(3 cr.)

Global Development, Environment, and Sustainability Concentration Core Course (3 cr.)

INTL-I 522	Theoretical and Empirical Overview of Global Development	(3 cr.)
OR		
SPEA-D 573	Development Economics	(3 cr.)

Electives (9 cr.)

Choose three courses from the following list:

INTL-I 502	Seminar in Global Health and Environment	(3 cr.)
SPEA-D 576	Approaches to Development	(3 cr.)
SPEA-D 669	Economic Development, Globalization and Entrepreneurship	(3 cr.)
SPEA-E 543	Environmental Management	(3 cr.)
SPEA-E 574	Energy Systems in Transition	(3 cr.)
SPEA-E 591	Climate Change Impacts on Natural Resources	(3 cr.)
SPEA-H 527	International Healthcare Systems	(3 cr.)
SPEA-L 563	Planning and Community Development	(3 cr.)
SPEA-L 622	Local Economic Development	(3 cr.)
SPEA-P 539	Management Science	(3 cr.)
SPEA-R 533	Public Natural Resources Law	(3 cr.)
SPEA-R 535	International Environmental Policy	(3 cr.)
SPEA-R 564	Environmental and Natural Resources Policy Design	(3 cr.)
SPEA-R 625	Environmental Economics and Policy	(3 cr.)
SPEA-R 626	Energy Policy Seminar	(3 cr.)
SPEA-R 643	Natural Resource Management and Policy	(3 cr.)
SPEA-R 645	Environmental Law	(3 cr.)
SPEA-R 674	Energy Policy and Economics	(3 cr.)
SPEA-S 515	Sustainable Communities	(3 cr.)
SPEA-S 596	Sustainable Development	(3 cr.)
SPEA-V 535	Managing and Leading in Public Affairs	(3 cr.)

MIA Specialized Concentration (12 credit hours)

A student, whose educational and professional goals are not satisfied by existing MIA concentrations, may design a Specialized Concentration that best suits his or her needs in consultation with a faculty advisor with final approval required by the relevant faculty program director(s). The student, the student's advisor, and the appropriate Faculty Program Director must sign a Specialized Concentration Form that specifies the courses that will comprise the customized concentration. This form is available the Forms section of the Current Student Portal. The completed Specialized Concentration Form must be submitted prior to enrolling in the courses outlined. The concentration must be declared within the first 24 credit hours of the student's academic program.

MIA specialized concentrations consist of 12 credit hours.

Although no specific guidelines exist for the courses to be included in a Specialized Concentration, students must take O'Neill/HLS courses unless approved by a faculty advisor(s) and the appropriate Faculty Program Director(s). Students must name their Specialized Concentration. However, these names will not appear on their IU transcript. Instead, after "Major" the words "Specialized Study" will appear.

Master of Science in Healthcare Management Joint Degree

The Master of Science in Healthcare Management (MSHM) degree program is a prestigious and rigorous one-year, 36 credit-hour degree offered jointly between the Paul H. O'Neill School of Public and Environmental Affairs (O'Neill) and the Kelley School of Business (KSB) at Indiana University Bloomington. We prepare students to lead in a variety of health-focused industries and fields including hospitals, healthcare consulting firms, pharmaceutical companies, medical device companies, insurance, long term care facilitates and others. No prior experience or knowledge in healthcare and/or business is required! Students will complete 18 credit hours in Kelley and 18 credit hours in O'Neill.

There are 3 pathway options to complete the MSHM program: Traditional - Hybrid, Traditional - Online, and Executive. The two traditional pathways have the same curriculum while the executive pathway has a slightly different curriculum to meet the needs of an experienced working professional.

MSHM Requirement I: Program Requirements Outside of Required Courses

All MSHM students must successfully complete the following items in order to be eligible for graduation:

- Online onboarding class before first semester begins
- MSHM Orientation before first semester begins
- Create and defend a portfolio
- Demonstrate and ocument self-care behaviors on a semester basis through effective utilization of the 8 Dimensions of Wellness

MSHM Requirement II: Kelley Credits (18 credit hours)

Requirements: Traditional Pathway (15 credit hours)

The following courses are required:

BUKD-C 520	Quantitative Analysis	(3 cr.)
BUKD-C 580	Intro to Operations and Supply Chain Management	(3 cr.)
BUKD-X 574	Career Design and Development	(1.5 cr.)
BUS-X 545	Business Foundations	(6 cr.)

BUS-Z 540	HR Systems and Organizational Effectiveness	(1.5 cr.)

Requirements: Executive Pathway (15 credit hours)
The following courses are required:

BUEX-V 595	Health Economics for Policy & Management	(3 cr.)
BUEX-V 596	Healthcare Finance	(1.5 cr.)
BUEX-V 596	Health Policy	(1.5 cr.)
BUEX-V 597	Healthcare Leadership	(3 cr.)
BUEX-V 598	Capstone in Public and Environmental Affairs	(3 cr.)
BUKD-X 574	Career Design and Development	(1.5 cr.)
BUS-Z 590	Independent Study: Leadership Perspectives, Talent Management, and Organizational Change	(1.5 cr.)

Electives - Traditional and Executive Pathway: (3 credit hours)
Choose one course from the following list:

BUKD-X 520	Kelley Washington Campus Program	(3 cr.)
BUKD-X 530	Economics of Healthcare Analytics	(3 cr.)
BUS-X 518	Business of Life Sciences I: Trends*	(1.5 cr.)
AND		
BUS-X 519	Business of Life Sciences: Value Chain*	(1.5 cr.)
Note:	If taking X518/ X519, students MUST take both courses to fulfill the 3-credit electives requirement. Please note, these courses have residential components that might not work for online students who live outside of Bloomington.	

MSHM Requirement III: O'Neill Credits (18 credit hours)
Requirements - Traditional and Executive Pathway: (9 credit hours)
The folowing courses are required:

SPEA-H 525	Health Economics for Policy and Management	(3 cr.)
SPEA-H 549	Health Policy	(3 cr.)
SPEA-H 600	Capstone	(3 cr.)
Note:	H600 requires successful completion of Practicum 1 and 2, otherwise, students must take V600.	

Electives - Traditional and Executive Pathway: (9 credit hours)
Group 1 Electives: (3 credits hours)
Select one course from the following list:

SPEA-H 524	Healthcare Industry Regulations	(3 cr.)
SPEA-H 526	Healthcare Finance	(3 cr.)
SPEA-V 506	Statistical Analysis for Effective Decision Making	(3 cr.)

Group 2 Electives: (6 credits hours)
Select two courses from Group 1 Electives (not used in the Group 1 requirement) or the following list:

SPEA-H 585	Practicum I in Healthcare Leadership	(3 cr.)
SPEA-H 586	Practicum II in Healthcare Leadership	(3 cr.)
SPEA-M 547	Negotiation and Dispute Resolution for Public Affairs	(3 cr.)
SPEA-N 522	Human Resource Management in Nonprofit Organizations	(3 cr.)
SPEA-N 525	Management in the Nonprofit Sector	(3 cr.)
SPEA-N 557	Proposal Development and Grant Administration	(3 cr.)
SPEA-P 507	Data Analysis and Modeling	(3 cr.)
SPEA-P 562	Public Program Evaluation	(3 cr.)
SPEA-V 535	Managing and Leading in Public Affairs	(3 cr.)

SPEA-V 536	Rights and Responsibilities: How Law Shapes Public Affairs	(3 cr.)
Note:	If you are in the online program, some of the elective courses will be offered as SPCN instead of SPEA	

Master of Arts in Arts Administration

Program Goals and Objectives

Arts administrators are extraordinary individuals. They must function as managers, fundraisers, planners, educators, conciliators, facilitators, communicators, and most important, as leaders. They must be realists as well as idealists, respectful of the needs of both art and business, and forward-looking yet mindful of the past.

Since 1971 the Indiana University Arts Administration Program has been committed to the development of such leaders. The program, a 16-month, multidisciplinary course of study leading to an M.A. in Arts Administration, is broad-based in outlook and curriculum and strives to achieve a balance of artistic and management concerns, theory and hands-on experience. Students complete three semesters of course work, on-campus practicums, and a supervised internship off campus. The program seeks to serve students who are at the beginning stages of their careers as well as older students wishing to change careers.

Though small in size, the City of Bloomington provides an ideal setting for the program. The city's thriving arts community includes more than 150 arts organizations as well as the internationally acclaimed Lotus World Music and Arts Festival. On the IU Bloomington campus, the Jacobs School of Music presents more than 1,000 concerts and events each year, and a new production opens almost every other week on one of the two stages in the Department of Theatre, Drama & Contemporary Dance. Other cultural organizations on campus include the IU Auditorium, which offers touring Broadway productions; the Eskenazi Museum of Art, one of the nation's finest university art museums; the Mathers Museum of World Cultures; the African American Arts Institute; the IU Cinema; and the Lilly Library of rare books and manuscripts.

Degree requirements

(45 credit hours) The program requires 45 credit hours of course work. Some students finish in three semesters plus some summer work, while others stay four semesters.

In the summer following the second semester of course work most students complete a 280 hour internship in an arts organization of their choice. Students on a three-semester plan typically complete 15 credit hours each semester. Students on a four-semester plan complete 12 credits per term for the first academic year, and 9-12 credits per term in their second year. Some students opt to complete their internship in the spring following their final fall semester of course work. While there is no thesis requirement, extensive writing projects are part of the capstone seminar course and internship experiences.

MAAA Core (18 credit hours)

AADM-Y 502	Introduction to Arts Administration and Organizational Behavior	(3 cr.)
AADM-Y 515	Financial Management for the Arts	
AADM-Y 530	Audience Development and Marketing the Arts	(3 cr.)
AADM-Y 558	Fund Development for Nonprofit Organizations	(3 cr.)
AADM-Y 562	Legal Issues in the Arts	(3 cr.)
AADM-Y 650	Seminar in Arts Administration	(3 cr.)

MAAA Management and Policy Courses (15 credit hours)

Area 1: Performing Arts

Choose one of the following:

AADM-Y 508	Managing Performing Arts Organizations	(3 cr.)
AADM-Y 511	Performing Arts Center Management	(3 cr.)

Area II: Visual Arts

Choose one of the following:

AADM-Y 506	Curating for Museums and Galleries	(3 cr.)
AADM-Y 525	Museum Management	(3 cr.)

Area III: Arts and Cultural Policy

Choose one of the following:

AADM-Y 551	Cultural Planning and Urban Development	(3 cr.)
AADM-Y 559	Public Policy in the Arts	(3 cr.)

Area IV: Technology Management

Choose one of the following:

AADM-Y 500	Digital Literacy in Arts and Culture	(3 cr.)
SPEA-I 515	Data Science in Public and Environmental Affairs	(3 cr.)

SPEA-I 519	Data Base Management Systems	(3 cr.)

Area V: Community and Place

Choose one of the following:

AADM-Y 507	Seminar in Community and Place	(3 cr.)
AADM-Y 526	Arts and Social Change	(3 cr.)

Electives (12 credit hours)

Elective courses, any 500+ level course

Experiential Requirement (0-6 credit hours)

AADM-Y 550	Practicum in Arts Administration	(0-3 cr.)
AADM-Y 750	Internship in Arts Administration	(0-3 cr.)

Master of Arts in Arts Administration Dual Degree Programs

Master of Arts in Arts Administration-Master of Arts in Folklore and Ethnomusicology (M.A.A.A.-M.A.F.E.)

Master of Arts in Arts Administration-Master of Arts in Musicology (M.A.A.A-M.A.M.)

Master of Arts in Arts Administration-Master of Arts in Cultural Policy and Arts Management (M.A.A.A.-M.A.C.P.A.M.)

Dual Master of Arts in Arts Administration and Master of Arts in Folklore and Ethnomusicology (M.A.A.A.-M.A.F.E.).

The Indiana University Bloomington, O'Neill School of Public and Environmental Affairs and the Department of Folklore and Ethnomusicology offers a dual degree, Master of Arts in Arts Administration and Master of Arts in Folklore and Ethnomusicology. This degree is intended for a range of students, especially, although not exclusively, those interested in leadership and administration in museums and festivals. The two programs are each of national and international distinction. The dual degree gives students an opportunity over the course of three years of full time study (with a total of 60 credit hours), to earn degrees from each of these distinguished programs, combine classroom and practicum work from both programs.

Application and Admission

Students must apply for admission to the Master's Programs for both the Arts Administration program at the O'Neill School of Public and Environmental Affairs and the Department of Folklore and Ethnomusicology. Admissions criteria established for each program must be met; acceptance into one program does not guarantee acceptance into the other. To graduate under the dual degree option, the two degrees must be awarded simultaneously.

M.A. in Arts Administration (36 hours)

Students are required to complete 36 credit hours of courses distributed among the MAAA core, experiential learning, and electives.

MAAA Requirement I: Core (24 credit hours)

Students are required to take the following courses:

AADM-Y 502	Introduction to Arts Administration and Organizational Behavior	(3 cr.)
AADM-Y 504	Arts Organizations in the Public and Private Sectors	(3 cr.)
AADM-Y 515	Financial Management for the Arts	(3 cr.)
AADM-Y 525	Museum Management	(3 cr.)
AADM-Y 530	Audience Development and Marketing the Arts	(3 cr.)
AADM-Y 551	Cultural Planning and Urban Development	(3 cr.)
AADM-Y 558	Fund Development for Nonprofit Organizations	(3 cr.)
AADM-Y 562	Legal Issues in the Arts	(3 cr.)

MAAA Requirement II: Experiential (6 credit hours)

Students must complete three 50-hour arts management practicum projects, as well as a 280-hour internship.

1. Practicum (Y550) – Three different 50-hour arts management projects are completed throughout the three semesters of coursework. Students can register for all three credits at once or one credit per semester, as long as the total number of credits equals three. Students should seek advice from an advisor before beginning practicum work.

2. Internship (Y750) – Each student is required to complete a 280-hour internship. These internships give students an excellent opportunity to apply classroom theory and techniques to real-life experiences. Students should register for AADM-Y 750 either in the summer between their second and third semesters, summer between their fourth and fifth or in the spring following the fifth semester in the program. *Before registering, students must submit an internship contract with the Career Hub (O'Neill 200) for approval. To obtain credit, students must complete all required paperwork.*

Practicum and Internship Guidelines for International Master's Candidates:

International Students completing their Master of Arts in Arts Administration must meet with an advisor from the Office of International Services *prior to* beginning practicum and internship work. Students must apply for curricular practical training (CPT) in each semester

that they will complete practicum and/or internship work that is either off campus or a paid opportunity. Arts Administration requires immediate participation in Curricular Practical Training, and therefore a request for CPT must be made to the Office of International Services (OIS). A student may begin CPT only after receiving his or her Form I-20 with an endorsement from an advisor at OIS. For more information on CPT, please visit https://ois.iu.edu/living-working/employment/f1/curricular.html or call (812) 855-9086.

MAAA Requirement III: Seminar
Choose one of the following:

AADM-Y 650	Seminar in Arts Adminstration	(3 cr.)
FOLK-F 850	Thesis	(1-15 cr.)

MAAA Requirement IV: Electives (a maximum of 6 credit hours)
Depending on the capstone option chosen, 3-6 credit hours of arts administration electives are required, for a total of 36 credit hours in the arts administration program. Courses should be chosen in consultation with an academic advisor.

MAFE Requirements (24 credit hours)
Students take at least 24 credit hours in folklore and ethnomusicology. For a complete list of folklore course options please visit the UGS Bulletin or http://www.indiana.edu/~folklore/graduate/dualma.shtml.

Dual Master of Arts in Arts Administration and Master of Arts in Musicology (M.A.A.A.- M.A.M.)
Application and Admission
Students must apply for admission to the Master's Programs for both the Arts Administration program at the O'Neill School of Public and Environmental Affairs and the Master of Arts in Musicology at the Jacobs School of Music. Admissions criteria established for each program must be met; acceptance into one program does not guarantee acceptance into the other. Students may apply for admission to both programs simultaneously. Alternatively, students enrolled in one program may apply for admission to the other any time before the completion of their degree. To graduate under the dual degree option, the two degrees must be awarded simultaneously.

M.A. in Arts Administration (33 hours)
Students are required to complete 33 credit hours of courses distributed among the MAAA core, Performing Arts and Cultural Policy, and experiential learning.

MAAA Requirement I: Core (18 credit hours)
Students are required to take the following courses:

AADM-Y 502	Introduction to Arts Administration and Organizational Behavior	(3 cr.)
AADM-Y 515	Financial Management for the Arts	(3 cr.)
AADM-Y 530	Audience Development and Marketing the Arts	(3 cr.)
AADM-Y 558	Fund Development for Nonprofit Organizations	(3 cr.)
AADM-Y 562	Legal Issues in the Arts	(3 cr.)
AADM-Y 650	Seminar in Arts Administration	(3 cr.)

MAAA Requirement II: Management and Policy Courses (9 credit hours)
Choose one course in Performing Arts:

AADM-Y 508	Managing Performing Arts Organizations	(3 cr.)
AADM-Y 511	Performing Arts Center Management	(3 cr.)

Choose one course in Arts and Cultural Policy:

AADM-Y 551	Cultural Planning and Urban Development	(3 cr.)
AADM-Y 559	Public Policy in the Arts	(3 cr.)

Choose one course in Technology:

AADM-Y 500	Digital Literacy in Arts and Culture	(3 cr.)
SPEA-I 515	Data Science in Public and Environmental Affairs	(3 cr.)
SPEA-I 519	Data Base Manangement Systems	(3 cr.)

MAAA Electives: Additional Management and Policy Courses (0-6 credit hours)
Students take up to 6 credits of additional MAAA coursework to reach a total of 33 degree credits. Courses can be chosen from the remaining Management and Policy Courses above, as well as from the options below.

AADM-Y 500	Topics in Arts Administration	(3 cr.)
AADM-Y 506	Curating in Museums and Galleries	(3 cr.)
AADM-Y 507	Seminar in Community and Place	(3 cr.)
AADM-Y 525	Museum Management	(3 cr.)
AADM-Y 526	Art and Social Change	(3 cr.)

Alternately, students can opt to enroll in up to 6 credits of experiential learning in place of some or all of these elective credits.

MAAA Experiential Requirement (0-6 credit hours)

Students must complete three 50-hour arts management practicum projects, as well as a 280-hour internship.

1. AADM-Y 550, Practicum in Arts Administration (0-3 credit hours) – Three different 50-hour arts management projects are completed throughout the three semesters of coursework. Students should seek advice from an advisor before beginning practicum work.

2. AADM-Y 750, Internship in Arts Adminstration (0-3 credit hours) – Each student is required to complete a 280-hour internship. These internships give students an excellent opportunity to apply classroom theory and techniques to real-life experiences. Students should register for AADM-Y 750 either in the summer between their second and third semesters, summer between their fourth and fifth or in the spring following the fifth semester in the program. *Before registering, students must submit an internship contract with the Career Hub (O'Neill 200) for approval. To obtain credit, students must complete all required paperwork.*

Practicum and Internship Guidelines for International Master's Candidates:
International Students completing their Master of Arts in Arts Administration must meet with an advisor from the Office of International Services *prior to* beginning practicum and internship work. Students must apply for curricular practical training (CPT) in each semester that they will complete practicum and/or internship work that is either off campus or a paid opportunity. Arts Administration requires immediate participation in Curricular Practical Training, and therefore a request for CPT must be made to the Office of International Services (OIS). A student may begin CPT only after receiving his or her Form I-20 with an endorsement from an advisor at OIS. For more information on CPT, please visit https://ois.iu.edu/living-working/employment/f1/curricular.html or call (812) 855-9086.

MA Musicology Requirements (21 credit hours)

Students take at least 21 credit hours in musicology. For a complete list of musicology course options please visit the Jacobs School of Music Bulletin.

Dual Master of Arts in Arts Administration and Master of Arts in Cultural Policy and Arts Management

If you're looking to establish an international career in cultural policy and management, the dual Master of Arts in Arts Administration from Indiana University and Master of Arts in Cultural Policy and Arts Management from University College Dublin (M.A.A.A.-M.A.C.P.A.M.) is an exciting opportunity to gain substantial professional development and relevant work experience while completing your arts administration coursework.

In the M.A.A.A.-M.A.C.P.A.M. program, you'll study arts management and cultural policy in both the United States and Europe, and get an immersive, global perspective on the field. This experience is designed to expand career possibilities onto a global stage, and add to the value you're able to bring to arts organizations no matter where you go.

Interested students will need to apply to the O'Neill School and University College Dublin (UCD) separately. Please contact the Arts Administration program at maaainfo@indiana.edu for more information.

M.A. in Arts Administration (30 credit hours)

Program Requirements

Core Courses (12-15 credit hours)

AADM-Y 500	Digital Literacy in Arts & Culture	(3 cr.)
AADM-Y 502	Introduction to Arts Administration and Organizational Behavior	(3 cr.)
AADM-Y 530	Audience Development and Marketing the Arts	(3 cr.)
AADM-Y 551	Cultural Planning and Urban Development	(3 cr.)
AADM-Y 558	Fund Development for Nonprofit Organizations	(3 cr.)
AADM-Y 550	Practicum in Arts Administration	(0-3 cr.)
SPEA-I 515	Data Base Management Systems	(3 cr.)
SPEA-I 519	Data Science in Public and Environmental Affairs	(3 cr.)

Electives (15-18 credit hours)

AADM-Y 500	Arts Education Policy	(3 cr.)
AADM-Y 500	Arts Writing and Advanced Marketing	(3 cr.)
AADM-Y 500	History of Museums	(3 cr.)
AADM-Y 506	Curating in Museums and Galleries	(3 cr.)
AADM-Y 507	Seminar in Community and Place	(3 cr.)
AADM-Y 508	Managing Performing Arts Organizations	(3 cr.)
AADM-Y 511	Performing Arts Center Management	(3 cr.)
AADM-Y 525	Museum Management	(3 cr.)
AADM-Y 526	Art and Social Change	(3 cr.)
AADM-Y 551	Cultural Planning and Urban Development	(3 cr.)
AADM-Y 559	Public Policy and the Arts	(3 cr.)

SPEA-N 523	Civil Society and Public Policy	(3 cr.)

M.A. in Cultural Policy and Arts Management (45 units)

Program Requirements

Core Courses (90 ECTS/45 IU credit hours)

ACC40730	Finance	(5 ECTS)
CULP4010	Marketing in the Arts	5 ECTS)
CULP40050	Research Methods/Seminar	(2.5 ECTS)
CULP40010	Business 1 (Management)	(5 ECTS)
CULP40140	Dissertation	(30 ECTS)
CULP40300	Cultural Policy 1: Comparative Issues	(10 ECTS)
CULP40310	Cultural Policy 2: Ireland	(5 ECTS)
CULP40240	Cultural Policy 3 Arts Lives	(5 ECTS)
CULP40270	Business 3 (Strategic Plan)	(10 ECTS)
CULP40280	Work Experience	(10 ECTS)
LAW41750	Law of Cultural Policy & Arts Management	(2.5 ECTS)

Accelerated Master of Arts in Arts Administration

On the Bloomington campus, the Accelerated Master's Program (AMP) allows exceptional undergraduate O'Neill students to earn both their undergraduate degree and a Master of Arts in Arts Administration (M.A.A.A.) within an accelerated time frame (generally five years). Participation in this program may allow the student to fulfill some graduate program requirements during their senior or fourth year. Depending upon the path chosen, some graduate courses may count for both graduate and undergraduate degree requirements. For additional information, including major specific requirements, students should meet with their undergraduate academic advisor.

Students wishing to participate in the AMP must meet these additional guidelines: All requirements for both degrees must be met.

- Admitted students are permitted to take graduate courses during their final undergraduate year and must apply and be admitted by the end of the prior academic year.
- Graduate admission remains conditional until the student has successfully completed the undergraduate degree.
- No more than 50% of graduate work may be applied to both degrees, though schools may set more rigorous requirements. A limited number of credit hours may be applied to both degrees. Undergraduate courses may not be used toward completion of graduate degree requirements.

Approval Process for New Accelerated Master's Degrees

Accelerated degree proposals for existing master's degrees must be approved by the offering undergraduate and graduate departments and schools and are then routed for review by the Campus Curriculum Committee, Academic Leadership Council, and Board of Trustees, a three-month process. The proposal form below can be filled out and submitted to iux2@indiana.edu.

Doctor of Philosophy in Environmental Science

This doctoral program is administered by the O'Neill School of Public and Environmental Affairs in cooperation with the Departments of Biology, Chemistry, Geography, and Geological Sciences. The Ph.D. in environmental science degree is awarded by the University Graduate School.

The program provides a rigorous, comprehensive education in environmental science. The specific objectives of the program are:

- to conduct advanced research and scientific analysis of environmental events, issues, and problems
- to further understanding of the nature and management of natural and human environments
- to provide an opportunity for students and faculty members in several departments to engage in collaborative environmental research in an interdisciplinary mode

Admission

A student must apply to the O'Neill School of Public and Environmental Affairs for doctoral studies; those accepted will be recommended to the University Graduate School for formal admission into the Ph.D. program. Applicants to this program must have completed at least a bachelor's degree in science, mathematics, engineering, or a related field. Prospective students are required to submit:

- a statement of purpose, which should be as specific as possible and, preferably, should refer to potential research mentors by name
- official transcripts of all undergraduate and graduate course work completed
- three letters of recommendation.
- Applicants whose native language is not English must also submit results of the Test of English as a Foreign Language (TOEFL)

Degree Requirements

- substantial knowledge in a primary environmental science concentration
- breadth in related environmental science and policy
- an understanding of research methods
- an in-depth knowledge of the dissertation topic
- a dissertation that demonstrates the student's ability to analyze, explain, and interpret research clearly and effectively

Advisory Committee

During the first semester of enrollment, each student must organize an advisory committee. Normally this committee consists of at least four faculty members: at

least two should be from the O'Neill School of Public and Environmental Affairs; the others may be from other departments or from outside the university. Membership of the advisory committee is approved by the director of the Doctoral Program in Environmental Science and the dean of the University Graduate School. At least three members of the advisory committee must be full members of the graduate faculty.

Fields of Study

Each student should define a principal field of study, which may be interdisciplinary. The student should prepare a proposal outlining a program of course work that the student believes lies within that principal field.

Each student should also prepare a program of course work that fulfills the requirement of breadth in environmental science and policy. The breadth requirement may be fulfilled by using a wide spectrum of environmentally related courses, including areas such as economics, law, and management, in addition to other science courses.

Each student should also prepare a statement of courses or activities for meeting the research methods requirement. Normally these include subjects such as computer science, geographic information systems, remote sensing, statistics, and mathematical modeling, although other technical skill areas such as electronics and analytical chemical techniques may be appropriate for some students.

Narrative Statement

Each student must prepare a narrative statement that includes a discussion of the student's previous educational experiences, a statement of career objectives, a statement of research interests, and a proposed program of course work.

Each student must submit the narrative statement to the advisory committee for approval, usually during the first semester in the program.

Course Requirements

The exact nature and amount of course work in each of the three areas—principal field of study, breadth in environmental science and policy, and research methods—is determined by the advisory committee after review and approval of the student's proposed plan of study in each of these areas. Selection of specific courses is based on obtaining

- adequate knowledge for qualifying examinations
- appropriate preparation for a research project
- a mixture of courses that meets the individual professional goals of the student

The Ph.D. degree requires the completion of at least 90 credit hours in advanced study and research beyond the bachelor's degree. A student must complete a minimum of 30 credit hours of advanced course work in environmental science and policy. Students must also complete a minimum of 30 credit hours of research, normally taken as SPEA-E 625 or SPEA-E 890. The student, with the approval of the advisory committee, should complete some combination of additional course work and research sufficient to meet the 90 credit hour requirement.

Students are required to enroll in SPEA-E 680 Seminar in Environmental Science and Policy for a total of 4 credit hours (1 credit hour/semester) during the course of their degree program. In the event of an extenuating circumstance, in consultation with their major advisor and approval of the program director, a student could enroll in 2 credit hours of SPEA-E 680 during a semester. Students must give at least one seminar presentation in SPEA-E 680 as part of their Ph.D. in environmental science requirement.

Students should note that 30 credit hours of advanced course work, if properly selected, and 6 credit hours of research, may be applied toward the Master of Science in Environmental Science (M.S.E.S.) degree. With an additional 12 credit hours of approved course work, a student may be awarded the M.S.E.S. degree while completing the requirements for the Ph.D. in environmental science. Completion of the M.S.E.S. degree as part of this doctoral program is not a requirement; however, this option may be appropriate for some students.

Qualifying Examinations

Before a student is admitted to candidacy, all requirements determined by the advisory committee must be met and the qualifying examinations passed. A student who fails qualifying examinations may retake them only once.

The decision to admit a student to doctoral candidacy is made by the advisory committee, which evaluates the student's performance in the written examination, research proposal, and oral examination.

Written Examination

This examination should be taken by the end of a student's fifth semester in the Ph.D. program. The exam focuses on topics covered by the student's course work and related to the student's research interests. The examination is written and graded by the student's advisory committee. The written examination is graded as pass, conditional pass, or fail.

Research Proposal

No later than the end of the fifth semester, the student should submit a written research proposal for review by the advisory committee. The proposal should be documented, clearly stating a research objective, the approach to be taken, and the significance of the work.

Oral Examination

Each candidate is examined orally by the advisory committee. The oral examination expands upon the written examination and covers the student's research proposal.

Research Committee

Upon the student's successful completion of the qualifying examination, a research committee is formed. Normally this committee consists of at least four faculty members: at least two should be from the School of Public and Environmental Affairs; the others may be from other IU departments. The director of the Doctoral Program in Environmental Science recommends the student's research committee to the dean of the University Graduate School. At least three members of the research committee must be full members of the graduate faculty.

Dissertation

A dissertation is required and must be of sufficient value to warrant publication. The dissertation must represent a substantial research effort, both in quality and quantity. The dissertation requirement may be met by preparing a traditional dissertation or by preparing a portfolio of research documents including publications, manuscripts in press, and completed manuscripts suitable for submission to a journal. These documents may have multiple authors, although the doctoral candidate must demonstrate that he or she made significant contributions to at least two of the publications or manuscripts submitted for review. The research portfolio must have introductory and concluding chapters to integrate across the topics. The research portfolio also must be prepared to meet the University Graduate School's requirements for dissertations. A public presentation of the dissertation research is required. The dissertation must be approved by the research committee.

Doctor of Philosophy in Public Affairs

The Doctoral Program in Public Affairs was created to take advantage of the unique strengths of O'Neill's interdisciplinary faculty and research programs, both of which have earned wide recognition from peer institutions, national and international agencies, and professional groups. The curriculum equips students with the necessary skills for independent research and analysis of problems, issues, and solutions in government and the nonprofit sector in four major fields:

- **Public Finance:** the theory and practice of fiscal administration, including public budgeting, revenue administration, and financial management
- **Public Management:** the design and operation of government institutions, including strategic/operations management and interrelationships between public and private organizations;
- **Public Policy Analysis:** research methods and quantitative techniques for policy analysis, including the content, design, and evaluation of public programs; and
- **Environmental Policy:** the study of and contribution to public policies that affect the environment, both domestic and international, including legal, economic, and other policy tools and approaches.

Instead of being grounded in a traditional academic discipline, each of the fields has developed from several theoretical literatures applied to real-world public affairs problems. Although research is grounded in the social sciences, the context of inquiry reverses the normal research process. Instead of beginning with questions originating in discipline-based scholarship, the research process begins with public problems and issues. The research challenge, then, is to match available tools of inquiry to the research opportunities presented by problems.

Admission

Students apply directly to the O'Neill School of Public and Environmental Affairs; those accepted are recommended to the University Graduate School for formal admission into the Ph.D. program. Application materials can be found at https://graduate.indiana.edu/admissions/apply.shtml. Applicants to this program must have completed at least a bachelor's degree. Prospective students are required to submit (1) a statement of purpose, which should be as specific as possible and, preferably, should refer to potential research mentors by name; (2) official results of the Graduate Record Examinations (GRE); (3) official transcripts of all undergraduate and graduate work completed; and (4) three letters of recommendation. Applicants whose native language is not English must also submit results of the Test of English as a Foreign Language (TOEFL).

Degree Requirements

The Ph.D. in Public Affairs degree requires the completion of at least 90 credit hours in advanced study and research beyond the baccalaureate. Typically, two-thirds of the 90 credit hours are taken in formal course work and one-third in thesis credit. Students completing a Master of Public Affairs at the O'Neill School of Public and Environmental Affairs or similar degree may be allowed to transfer some of their graduate course work (30 hours maximum) if approved by their Progress Review Committees, though a prior master's degree is not required for admission.

- Core Field Requirements
- Research Tool Skills
- Major Fields
- Minor Field

Major Junctures

Preliminary Exam

Students must take the first six core requirement courses during their first year in the program. At the end of their first year, students are required to sit for a preliminary exam on material covered in these six courses. The core faculty will meet to assign grades of pass, qualified pass, or fail on this exam. Students receiving a qualified pass will be required to re-take portions of the exam. Students who receive a fail on the exam will be required to re-write the entire exam. Students will receive a pass or fail on the retake. Those who fail will not be allowed to continue in the program.

Progress Review Committee

Early in the student's program, but in no case later than the third semester in the program, the student must form a progress review committee. The committee consists of four to five members and includes at least two faculty members from the student's chosen major fields of study and a minor field representative. The committee members act as mentors and help monitor the selection and fulfillment of program requirements. The chairperson of the committee serves as the student's principal advisor.

At the end of the first year, the student develops a Progress Review Committee. The committee, in cooperation with the student, defines program objectives, supervises the selection and completion of the minor field, and monitors overall progress toward completion of course work requirements. Members of the Progress Review Committee should be scholars who know the student's academic record and who are recognized experts in the field in which the student will stand for examination. The committee will consist of four to five members chosen by the student in consultation with the director of the Ph.D. program. At least two members of the Progress Review Committee will be chosen from the student's major field. It is required that one member of the Progress Review

Committee be a professor and represent the inside or outside minor.

Third-Semester Review

During the third semester, each student holds a third semester review meeting with the Progress Review Committee. The purpose of the meeting is to reach an agreement between the student and the committee about the character and status of the student's program. This meeting also serves as a formal evaluation of the student's performance and prospects.

Before the meeting of the Progressive Review Committee, the student develops a Progress Review Statement. The statement needs to include background professional and educational information, course work completed and planned in each field and for basic and research tool skills, tentative dates for taking the qualifying exam and a discussion of a proposed dissertation topic. Once approved by the committee, the statement serves as a contract for the completion of degree requirements.

In the progress review meeting, the committee members review the student's record of past and planned courses, and the likely dissertation topic. The committee determines whether the proposed program of courses will prepare the student for the examination to be taken at the end of the course work as well as for the dissertation.

Third Year Paper

During the spring semester of the third year, each student will prepare an original research paper to present before the Progress Review Committee. The committee will evaluate the quality of the paper and its presentation. The principal objective of the research paper is to allow the faculty to judge whether the student has the ability to complete all requirements for this research-oriented degree in a timely fashion. Thus, of most importance will be that the paper demonstrates the student's ability to carry out reasonably independent research and write the results in a well-reasoned and coherent fashion. The paper should also demonstrate that the student has a good command of the literature in the area and has the ability to use appropriate research methods in carrying out the analysis. It is anticipated that the progress review paper will be a revision of a substantial research paper prepared to fulfill a requirement for a regular course. (The student can, however, submit an entirely new paper to fulfill this requirement.) The paper should be of a quality warranting presentation at a professional society meeting.

Qualifying Examinations

Students are required to sit for a qualifying exam in their major field. SPEA field exams employ a standard format for all students in a field and are offered at predetermined times each year. Each exam is administered by a team of faculty and organized by an exam coordinator for each field. Students will receive a high pass, pass, qualified pass, or a fail the exams. Students receiving a qualified pass will be asked to re-write portions of the exam, or complete an oral examination. Those who fail the second attempt will not be allowed to continue in the program. Upon completion of the exam, signatures of the Committee members and Program Director are required on the Report of Preliminary Examination Committee form.

Dissertation

After filing for candidacy status, the doctoral candidate forms a Research Committee consisting of at least four faculty members, including one representative of the candidate's minor field. This committee may be but is not necessarily identical to the Progress Review Committee. The selection of Research Committee members should reflect the dissertation topic and the expertise of the faculty chosen.

The candidate prepares a dissertation proposal to present and defend in a meeting of the Research Committee. The Research Committee reviews the research proposal and requires changes as needed.

Once the dissertation research is completed, the candidate defends the thesis in an open oral examination meeting. The Research Committee is ultimately responsible for determining whether the dissertation is acceptable.

Placement

The Indiana University O'Neill School of Public and Environmental Affairs Ph.D. in Public Affairs is ranked as high as #1 among public affairs Ph.D. programs in the United States by the National Research Council. The program is able to recruit highly skilled and talented doctoral students and place graduates in some of the most prestigious public affairs programs in the United States and abroad. Graduates of the program now serve (or once served) on the faculties of Syracuse University, University of Georgia, University of Kansas, University of Washington, Ohio State University, University of Arizona, Dartmouth College, North Carolina State University, Brigham Young University, University of South Carolina, DePaul University, University of Colorado, Iowa State University, Cleveland State University, Yonsei University, University of Hong Kong and National University of Taipei. In addition, the program enjoys broad support from the faculty.

Core Requirements

The following six courses are required for all Public Affairs students:

SPEA-M 772	Public Organization and Management II	(3 cr.)
SPEA-P 790	Seminar in Public Policy Process	(3 cr.)
SPEA-P 710	Topics in Public Policy - Microeconomics for Public Policy	(3 cr.)
SPEA-V 706	Statistics for Research in Public Affairs I	(3 cr.)
SPEA-V 707	Statistics for Research in Public Affairs II	(3 cr.)
SPEA-V 780	Research Design and Methods in Public Affairs	(3 cr.)

Students must take these six courses during their first year in the program.

In addition to the six courses listed above, the following two courses are required for all Public Affairs students:

- SPEA-V 721 Seminar in Teaching Public and Environmental Affairs (2 cr.) This course prepares students for college teaching and their professional responsibilities toward current and future students. It is taken in the student's second year in the program.
- SPEA-P 791 Workshop in Public Policy (0 -1 cr.) Each student is required to take this zero to one-credit hour course for credit for three semesters. The workshop provides an experiential base that prepares students to critique research in the field, prepare manuscripts for publication, and to defend new ideas and theories. The course meets once a week for 90 minutes.

Research Tool Skills

Students must take SPEA-V 706, SPEA-V 707 and SPEA-V 780 as part of the core requirements. In addition, students must demonstrate either (1) advanced proficiency in quantitative analysis or specialized research skills by completing two additional courses approved by the student's Progress Review Committee, or (2) proficiency in a language appropriate to his/her field of study and approved by the Progressive Review Committee. To qualify as language-proficient, a student must take a language proficiency exam from the appropriate language department at Indiana University

Major Fields

Students select one of the four O'Neill Public Affairs major fields (identified below) to prepare for their qualifying examinations. For each field, the student must complete required courses and approved electives.

Public Management

The design and operation of government and not-for-profit institutions, including strategic/operations management and interrelationships between public, private, and civil society organizations.

Required courses:

SPEA-M 771	Public Organization and Management I	(3 cr.)
SPEA-P 710	Public Organization and Management III	(3 cr.)
SPEA-P 710	Modern Lines of Research in Public Management	(3 cr.)

Public Finance

The theory and practice of fiscal administration, including public budgeting, revenue administration, and financial management.

Required courses:

SPEA-F 766	Public Revenue	(3 cr.)
SPEA-F 768	Seminar in Public Budgeting	(3 cr.)
SPEA-F 785	Research Seminar in Public Debt	(3 cr.)

Public Policy Analysis

Research methods and quantitative techniques for policy analysis, including the content, design, and evaluation of public programs.

Required courses:

SPEA-P 723	Public Programs - Theory and Evidence	(3 cr.)
SPEA-P 762	Public Program Evaluation	(3 cr.)
SPEA-P 764	Seminar in Policy Analysis	(3 cr.)

Environmental Policy

Economics, law, politics, and implementation of environmental policies in the United States and abroad.

Required courses:

SPEA-P 710	Topics in Environmental Policy	(3 cr.)
SPEA-R 625	Environmental Economics	(3 cr.)
SPEA-R 645	Environmental Law **or** LAW-B 783 International Environmental Law	(3 cr.)

Minor Field

Students select a minor field according to their research interests, which must be approved by the Director of the Public Affairs Ph.D. Program. There is no examination for the minor field.

- As a minor field, students may choose any one of the four major fields (public management, public finance, public policy analysis, and environmental policy) different than their planned major field. Students must take the required courses from the major field (9 credit hours). Or one of the minor fields (arts administration, environmental studies, health policy, nonprofit and civil society, public management, regional economic development, and urban affairs) offered by O'Neill . Alternatively, a four-course sequence (12 credit hours) can be negotiated between the student and the Progress Review Committee.
- If approved by the Director of the Public Affairs Ph.D. Program, a student can pursue a self-designed minor that furthers their individual research interests. The self-designed minor is a four-course sequence (12 credit hours) negotiated between the student and the Progress Review Committee, which must contain at least two O'Neill doctoral seminars.

Courses taken as part of any minor field cannot count toward a major field.

A minimum cumulative grade point average of 3.0(B) must be attained in all courses used for the minor. Students taking a 500-level course (and SPEA-M 602) are required

to show that they have completed doctoral-level work in conjunction with the course in order to count the course for the minor. Students must alert the instructor to their doctoral status and request additional/alternative assignments. If the instructor is unwilling to do this, the student should select a different course in conjunction with the candidate's advisor.

Doctor of Philosophy in Public Policy

The Joint Ph.D. Program in Public Policy is a collaborative endeavor of the O'Neill School of Public and Environmental Affairs (SPEA) and the Department of Political Science.

Its emphasis is on the broad field of public policy, concerning the environment of public policy; the processes of policy formation, management, and implementation; and the analysis and evaluation of policy outputs and results. The institutional setting and design of the program offer a unique educational opportunity. Students in the program receive rigorous social science training and gain knowledge of government decision-making processes, problem-solving capabilities, and an understanding of the substantive aspects of public problems and their effects on public institutions.

Admission

All applicants to the public policy program are subject to approval by a SPEA–Department of Political Science joint admissions committee. Application materials can be found at www.gradapp.indiana.edu/. Applicants for admission and for financial assistance are required to submit a statement of career goals, official results of the Graduate Record Examination (GRE), official transcripts of all undergraduate and graduate work, and a minimum of three letters of recommendation. Students whose native language is not English also must submit results of the Test of English as a Foreign Language (TOEFL). The Joint Program Committee on Admissions and Financial Aid examines each application closely to determine suitability for the program. The committee looks beyond the formal academic record, at the applicant's demonstrated ability to pursue independent study, language and research skill training, and maturity and experience.

Degree Requirements

The University Graduate School requires doctoral students to complete 90 hours of graduate credit. Typically, two-thirds of the 90 credit hours are taken in formal course work and one-third in thesis credit. Students holding a Master's in Public Affairs at the O'Neill School of Public and Environmental Affairs may be allowed to transfer some of their graduate course work (36 hours maximum) or similar degree may be allowed to transfer some of their graduate course work (30 credit hours maximum) if approved by their Progress Review Committee.

- Core Requirements
- Research Tool Skills
- Fields of Concentration

Major Junctures

Progress Review Committee

The progress review committee must include at least two faculty members from The O'Neill School of Public and Environmental Affairs and two from the Department of Political Science. Members of the committee who hold joint appointments are considered representatives of their primary unit. The chairperson of the committee serves as the student's principal advisor. Early in the student's program term—gener-ally during the third semester—the committee provides the student with a formal review of the progress made toward the degree.

Qualifying Examinations

The Political Science Department gives field exams on a regular basis. O'Neill also offers qualifying exams on a regular basis. Typically, exams are offered twice per year. At their discretion, examiners for all fields may also require an oral examination.

After completing the course work for a field, the student is eligible to take the qualifying exam for that field. Joint Ph.D. Program students are required to take the field exam for their Political Science field at the time scheduled by the department. Field exams in Political Science are usually offered twice a year and are announced well in advance. O'Neill field exams are also standardized and offered at set times, usually once per year, and are coordinated by an exam coordinator for each field.

Students will receive a high pass, pass, qualified pass, or a fail for each of the three exams. Students receiving a qualified pass will either be asked to re-take portions of the exam or complete an oral examination. Upon completion of the exam, signatures of the Committee members and the Program Director are required on the Report of Preliminary Examination Committee form.

Dissertation

After filing for candidacy status, the doctoral candidate forms a Research Committee consisting of at least four faculty members. Two of the members must be O'Neill School of Public and Environmental Affairs faculty and two must be from Political Science. This committee may, but will not necessarily, be identical to the Progress Review Committee. The selection of Research Committee members should reflect the dissertation topic and expertise of the faculty chosen.

The candidate prepares a dissertation proposal to present and defend in a meeting of the Research Committee. The Research Committee reviews the research proposal and requires changes as needed.

Once the dissertation research is completed, the candidate defends the thesis in an open oral examination meeting. The Research Committee is ultimately responsible for determining whether the dissertation is acceptable.

Placement

The Ph.D. Office, the director of the program, and individual faculty members work hard to ensure that graduates of the program are placed in academic or research organizations. Graduates of the Joint Program in Public Policy have been very successful in obtaining such positions. Recent placements include George Washington University, Emory University, Florida State University, University of North Carolina, The Ohio State University, University of Arizona, Georgia Institute of Technology,

Ulsan University (Korea), the University of Massachusetts, the U.S. Agency for International Development, and University of Washington.

Core Requirements

Public Policy students are required to complete the following courses:

SPEA-P 790 **or** POLS-Y 565	Seminar in Public Policy Process **or** Public Administration, Law, and Policy: Approaches and Issues	(3 cr.)
SPEA-P 791	Workshop in Public Policy	(1 cr.)
SPEA-V 721 **or** POLS-Y 550	Seminar in Teaching Public and Environmental Affairs **or** Political Science and Professional Development	(2 cr.) **or** (1-3 cr.)
SPEA-V 780 **or** POLS-Y 570	Research Design and Methods in Public Affairs **or** Introduction to the Study of Politics	(3 cr.)

These courses prepare students for college teaching and their professional responsibilities toward current and future students. They are taken in a student's first year in the program.

Research Tool Skills

Required course work for research skills includes a basic two-semester statistics sequence and two additional elective courses or proficiency in a foreign language.

Basic Tool Skills

The two-semester quantitative analysis sequence requirement is generally fulfilled through one of the course sequences listed below.

SPEA-V 706	Statistics for Research in Public Affairs	(3 cr.)
and		
SPEA-V 707	Statistics for Research in Public Affairs II	(3 cr.)

or

POLS-Y 575	Political Data Analysis I	(3 cr.)
and		
POLS-Y 575	Political Data Analysis I	(3 cr.)

or

SOC-S 554	Statistical Techniques in Sociology I	(3 cr.)
and		
POLS-Y 650	Statistical Techniques in Sociology II	(3 cr.)

Advanced Tool Skills

In addition, students must demonstrate either (1) advanced proficiency in quantitative analysis or specialized research skills by completing two additional courses approved by the student's Progress Review Committee, **or** (2) proficiency in a language appropriate to the student's field of study approved by the Progress Review Committee. To qualify as language-proficient, a student must take a language proficiency exam from the appropriate language department at Indiana University.

Fields of Concentration

The O'Neill School of Public and Environmental Affairs and the Department of Political Science share equally in delivering Public Policy as a filed of concentration. Students in the Public Policy Program select two concentration areas—one from O'Neill and one from Political Science—in addition to the required concentration in public policy.

These fields of concentration include the following:

O'Neill:
Environmental Policy
Policy Analysis
Public Finance
Public Management

Political Science:
American Politics
Comparative Politics
International Relations
Political Philosophy
Political Theory and Methodology

-

Course offerings in O'Neill and Political Science help the student prepare for examinations in these fields, and students supplement their course work with directed readings and research. There is no predetermined set of courses required of all students. Course selection is the responsibility of the student, working in conjunction with his or her Progress Review Committee.

Doctoral Minors

The O'Neill School of Public and Environmental Affairs provides course work and other student-related activities for those working toward doctoral degrees in other schools and colleges of Indiana University who select a minor field in public and environmental affairs.

Seven minor fields are available:

Arts Administration Minor

Environmental Science Minor

Environmental Studies Minor

Nonprofits and Civil Society Minor

Public Management Minor

Regional Economic Development Minor

Urban Affairs Minor

Ph.D. Minor Arts Administration

(12 credit hours) The Ph.D. minor should be negotiated with the O'Neill School of Public and Environmental Affairs (SPEA) and Doctoral Advisor in Arts Administration.

For a more research-oriented minor, the student should work with the O'Neill Director of Doctoral Programs to construct an independent minor including doctoral research seminars.

Students may take any arts administration courses to fulfill the requirement (substitutions may be arranged with the Doctoral Advisor in Arts Administration).

Students choose four courses in consultation with the MAAA program director, and there is no comprehensive exam associated with the minor.

AADM-Y 502	Introduction to Arts Administration and Organizational Behavior	(3 cr.)
AADM-Y 504	Arts Organizations in the Public and Private Sectors	(3 cr.)
AADM-Y 505	Programming in the Performing Arts	(3 cr.)
AADM-Y 506	Curating for Museums and Galleries	(3 cr.)
AADM-Y 508	Managing Performing Arts Organizations	(3 cr.)
AADM-Y 511	Performing Arts Center Management	(3 cr.)
AADM-Y 515	Financial Management for the Arts	(3 cr.)
AADM-Y 522	IT Applications for the Arts	(3 cr.)
AADM-Y 526	Arts and Social Change	(3 cr.)
AADM-Y 530	Audience Development and Marketing the Arts	(3 cr.)
AADM-Y 551	Cultural Planning and Urban Development	(3 cr.)
AADM-Y 558	Fund Development for Nonprofit Organizations	(3 cr.)
AADM-Y 559	Public Policy and the Arts	(3 cr.)
AADM-Y 562	Legal Issues in the Arts	(3 cr.)
SPEA-N 525	Management for the Nonprofit Sector	(3 cr.)

Y500 Topics courses (topics vary from semester to semester) Current topics include: Arts Education Policy, Arts Entrepreneurship, Arts Writing and Advanced Marketing, Rural Arts Engagement, Graphic Design, and The Film Industry.

Ph.D. Minor in Environmental Science

(9 credit hours) Students in Ph.D. programs at Indiana University may, with the consent of their advisory committee, choose environmental science as an outside minor. The minor is flexible and is usually designed by students in accordance with their needs.

Requirements

1. The doctoral candidate must secure a faculty advisor in consultation with the director of the Doctoral Program in Environmental Science. The advisor may not be from the candidate's major department. The candidate's ES minor advisor serves as the representative in all examinations or other requirements of the candidate's Ph.D. program that relate to the minor. The advisor decides on the character of the examination, if any, in the minor field and certifies that the candidate has met the requirements of the minor.
2. The candidate must take at least 9 credit hours of graduate-level courses related to environmental science. The minor will consist of 3 total courses, 9 total credits. The minor will have at least two Environmental courses from SPEA and one elective course. The choice of courses should be made in consultation with the candidate's advisor and must be approved by the director of the Doctoral Program in Environmental Science. Acceptance of the proposed minor is based on two criteria: (1) the courses must have a direct relationship to environmental science, and (2) the courses must not normally be required as part of major or tool skill options in the student's major department. Courses in the minor program should be selected according to the student's interest.
3. A minimum cumulative grade point average of 3.0 (B) must be attained in all courses used for the minor.

Ph.D. Minor in Environmental Studies

(12 credit hours) Students in Ph.D. programs at Indiana University may, with the consent of their advisory committee, choose environmental studies as an outside minor. The minor is flexible and is usually designed by students in accordance with their needs.

Requirements

- The doctoral candidate must secure a faculty advisor in consultation with the director of the Doctoral Program in Environmental Science. The advisor may not be from the candidate's major department. The candidate's advisor serves as the representative in all examinations or other requirements of the candidate's Ph.D. program that relate to the minor. The advisor decides on the character of the examination, if any, in the minor field and certifies

that the candidate has met the requirements of the minor.

- The candidate must take at least 12 credit hours of graduate-level courses related to environmental studies. These courses must be from at least two different disciplines outside the candidate's major department. The choice of courses should be made in consultation with the candidate's advisor and must be approved by the director of the Doctoral Program in Environmental Science. Acceptance of the proposed minor is based on two criteria:
  - the courses must have a direct relationship to environmental studies
  - the courses must not normally be required as part of major or tool skill options in the student's major department. Courses in the minor program should be selected according to the student's interest. Students majoring in areas other than the natural sciences, for example, may wish to consider the offerings in the natural sciences; similarly, natural science students might consider course offerings in the social and behavioral sciences.
- A minimum cumulative grade point average of 3.0 (B) must be attained in all courses used for the minor.

Ph.D. Minor in Nonprofits and Civil Society

(12 credit hours) The nonprofits and civil society minor enables students to broaden their field of study by enhancing their knowledge of management and governance issues in the nonprofit sector. Students pursuing the minor in nonprofit management are able to develop and address research agendas incorporating questions related to nonprofit organization and their management.

Course Requirements

1. Doctoral students from other programs must secure an advisor from the faculty of the O'Neill School of Public and Environmental Affairs. The faculty advisor will serve as the representative of O'Neill in all examinations and other requirements of the student's Ph.D. program that pertain to the minor.
2. The minor in Nonprofit and Civil Society requires 12 credit hours of courses approved by the advisor. Three of the four courses must be SPEA courses. The additional courses may come from O'Neill or from any of a variety of disciplines relevant to nonprofit management. Some examples of courses appropriate for the O'Neill minor in nonprofit management are listed below.
3. A minimum cumulative grade point average of 3.0 (B) must be attained in all courses used for the minor.

Course Options (not an inclusive list):

SPEA-F 526	Financial Management for Nonprofit Organizations	(3 cr.)
SPEA-M 602	Strategic Management of Public and Nonprofit Organizations	(3 cr.)
SPEA-M 772	Public Organization and Management II	(3 cr.)
SPEA-N 521	The Nonprofit and Voluntary Sector	(3 cr.)
SPEA-N 522	Human Resource Management in Nonprofit Organizations	(3 cr.)
SPEA-N 523	Civil Society and Public Policy	(3 cr.)
SPEA-N 524	Civil Society in Comparative Perspective	(3 cr.)
SPEA-N 525	Management in the Nonprofit Sector	(3 cr.)
SPEA-N 558	Fund Development for Nonprofits	(3 cr.)
SPEA-N 720	Research and Theory of Nonprofit Management	(3 cr.)
SPEA-P 762	Public Program Evaluation	(3 cr.)
SPEA-V 785	Research Seminar in Public Affairs	(3 cr.)

Special requirement for 500-level courses. Students taking a 500-level course (and SPEA-M 602) are required to show that they have completed doctoral-level work in conjunction with the course in order to count the course for the minor. Students must alert the instructor to their doctoral status and request additional/alternative assignments. If the instructor is unwilling to do this, the student should select a different course in conjunction with the candidate's advisor.

Ph.D. Minor in Public Management

(12 credit hours) Students in doctoral programs at Indiana University may, with the consent of their advisory committee, select public management as an outside minor.

Requirements

1. The doctoral candidate must secure an advisor from the faculty of the O'Neill School of Public and Environmental Affairs. The faculty advisor serves as the representative of O'Neill in all examinations and other requirements of the student's Ph.D. program that pertain to the minor.
2. The student must take at least 12 credit hours of O'Neill graduate-level courses in public management. The choice of courses must be approved by the advisor.
3. A cumulative grade point average of at least 3.0 (B) must be maintained.

Ph.D. Minor in Regional Economic Development

(12 credit hours) The minor field in regional economic development involves study in the topics facing regional planners, developmental specialists, and researchers;

and an introduction to the body of knowledge in regional development and urban policy. The study of regional economic development and urban policy broadens students' perspectives, and students may apply this knowledge to a research agenda that incorporates regional developmental and urban policy questions. The student is expected to have studied both micro- and macroeconomics before beginning the minor program.

Requirements

1. The director of the Institute for Development Strategies serves as minor advisor. The advisor ensures that prerequisites have been met and certifies that the candidate has met the requirements of the minor. An examination may be required at the discretion of the advisor.
2. The candidate must take at least 12 credit hours of approved courses, which must include 2 core courses and 6 credit hours of electives. The core curriculum consists of SPEA-L 622 Urban Economic Development and SPEA-D 669 Economic Development, Globalization, and Entrepreneurship. This course is cross-listed as GEOG-G 817 Seminar in Regional Geography. The elective courses may come from a variety of disciplines, and must be selected in consultation with and approved by the student's minor advisor. One of the two electives may be outside of O'Neill.
3. A cumulative grade point average of at least 3.0 (B) must be maintained.

Ph.D. Minor in Urban Affairs

(12 credit hours) Students in doctoral programs at Indiana University may, with the consent of their advisory committee, choose urban affairs as an outside minor. The minor is flexible and is designed by students and their advisors in accordance with students' needs.

Requirements

1. The doctoral candidate must secure an advisor from the faculty of the O'Neill School of Public and Environmental Affairs. This faculty advisor serves as the school's representative in all examinations or other minor program requirements of the candidate's Ph.D. program. The advisor determines the character of the minor examination (if any), participates in the candidate's oral examinations, and certifies that the candidate has met the requirements of the minor.
2. The candidate must take at least 12 credit hours of graduate-level courses related to urban affairs. The selection of courses must be approved by the candidate's O'Neill advisor.
3. A cumulative grade point average of at least 3.0 (B) must be maintained.
4. Regardless of the minor chosen, students taking a 500-level course (and SPEA-M 602) are required to show that they have completed doctoral-level work in conjunction with the course in order to count the course for the minor. Students must alert the instructor to their doctoral status and request additional/alternative assignments. If the instructor is unwilling to do this, the student should select a different course in conjunction with the candidate's advisor.

Ph.D. Minor in Health Policy

(12 credit hours) Students in doctoral programs at Indiana University may, with the consent of their advisory committee, select public management as an outside minor.

Requirements

Doctoral students from other programs must secure an advisor from the faculty of the O'Neill School of Public and Environmental Affairs. The faculty advisor will serve as the representative of O'Neill in all examinations and other requirements of the student's Ph.D. program that pertain to the minor.

The minor in health policy requires 12 credit hours of courses approved by the advisor. Three of the four courses must be SPEA courses. The additional course may come from SPEA or from any of a variety of disciplines relevant to health policy.

The below required course (3 credit hours):

SPEA-V 710	Research Seminar in Health	(3 cr.)

Choose three courses from below, at least two must be SPEA courses (9 credit hours):

SPEA-H 526	Healthcare Finance	(3 cr.)
SPEA-H 524	Health Industry Regulation	(3 cr.)
SPEA-H 525	Health Economics for Policy and Management	(3 cr.)
SPEA-H 549	Health Policy	(3 cr.)
SPH-B 685	Public Health Policy and Politics	(3 cr.)
SPH-B 703	Acquiring External Funds for Research	(3 cr.)

A minimum cumulative grade point average of 3.0 (B) must be attained in all courses used for the minor.

Special requirement for 500-level courses. Students taking a 500-level course are required to show that they have completed doctoral-level work in conjunction with the course in order to count the course for the minor. These courses will have H710 versions created. Students must alert the instructor to their doctoral status and request additional/alternative assignments. If the instructor is unwilling to do this, the student should select a different course in conjunction with the candidate's advisor.

Certificate Programs

Admission

The student must have a bachelor's degree from an accredited college or university to apply. For the Certificate in Hazardous Materials Management, applicants must have completed one year of general chemistry. For the Certificate in Social Entrepreneurship, applicants must be enrolled in the M.P.A. program in O'Neill or the M.B.A. program in the Kelley School of Business.

Application Fee
Students must pay a nonrefundable application fee.

Program Restrictions
- O'Neill graduate certificate programs require 15 credit hours of approved O'Neill coursework with a minimum cumulative GPA of 3.0 (B).
- Course substitutions and course waivers are generally not accepted in certificate programs. However, students may petition the Faculty Program Director for an exception to these policies on the basis of extenuating circumstances.
- The O'Neill School does not allow concurrent admission to an O'Neill graduate degree and an O'Neill graduate certificate that have significant overlap (e.g. MPA degree and Nonprofit Management certificate; MAAA degree and Rural Arts Admin certificate). However, students seeking a degree in Environmental Science are eligible to pursue the Hazardous Materials Management Certificate. When pursuing an O'Neill degree and certificate simultaneously, credits may be shared between the degree and certificate when applicable.
- Students who have made progress toward an O'Neill graduate degree but are unable to complete the program are eligible to use their O'Neill graduate credits toward an O'Neill graduate certificate program.
- Students who have previously completed an O'Neill graduate degree are eligible for admission to an O'Neill graduate certificate as long as the certificate program does not match the student's concentration or focus area in the O'Neill graduate degree. Students who pursue this option may double-count 9 credits of O'Neill graduate coursework between their conferred O'Neill graduate degree and their O'Neill graduate certificate.
- All credits from a conferred O'Neill graduate certificate can count towards an O'Neill graduate degree.
- Students wishing to pursue the Social Entrepreneurship Certificate must first be admitted to the MPA program. All other O'Neill certificates are stand-alone certificates that do not require admission to a degree program.
- Admission to or successful completion of a certificate program does not guarantee subsequent admission to a O'Neill graduate degree program.
- Students enrolled in the certificate program who apply to O'Neill's graduate degree programs must meet all existing admission requirements.
- Students planning to request admission to a O'Neill graduate degree program after successfully completing a certificate program should refer to the application procedure presented earlier in this bulletin.
- With the exception of the Hazardous Materials Management certificate, students admitted to an O'Neill graduate certificate who wish to continue into an O'Neill graduate degree while also still pursuing the certificate must wait to apply to the degree program until they have completed 9 credit hours of coursework toward the certificate. If successfully admitted to the degree program before 9 credits have been completed, O'Neill will discontinue the certificate record, leaving the degree as the only credential the student will earn.

Certificates
Seven graduate certificates are offered on the Bloomington campus. Certificate programs are flexible and adaptable to the needs of either precareer or in-service students.

- Certificate in Hazardous Materials Management
- Certificate in Nonprofit Management
- Certificate in Public Budgeting and Financial Management
- Certificate in Public Management
- Certificate in Public and Nonprofit Evaluation
- Certificate in Rural Arts Adminstration
- Certificate in Social Entrepreneurship

Certificate in Hazardous Materials Management
The Certificate in Hazardous Materials Management is a 15 credit hour program of study. The program provides managers and technicians in concerned organizations and agencies, public and private, with training in the management of hazardous materials. The certificate program provides an information base that these managers and technicians can use to develop, implement, manage, and assess hazardous waste programs for local, state, and federal regulatory agencies. Graduate students in other disciplines can use the program to supplement their primary fields with course work in hazardous materials management, possibly using the certificate courses as part of a doctoral or master's minor.

Required Courses (9 credit hours)

SPEA-E 520	Environmental Toxicology	(3 cr.)
SPEA-E 542	Hazardous Materials	(3 cr.)
SPEA-E 562	Solid and Hazardous Waste Management	(3 cr.)

Electives (6 credit hours)
Two of the following courses:

SPEA-E 510	Hazardous Materials Regulation	(3 cr.)
SPEA-E 515	Fundamentals of Air Pollution	(3 cr.)
SPEA-E 526	Applied Mathematics for Environmental Science	(3 cr.)
SPEA-E 536	Environmental Chemistry	(3 cr.)
SPEA-E 552	Environmental Engineering	(3 cr.)
SPEA-E 553	Creation and Solution of Environmental Models	(3 cr.)
SPEA-E 554	Groundwater Flow Modeling	(3 cr.)
SPEA-E 556	Limnology	(4 cr.)

SPEA-E 560	Environmental Risk Analysis	(3 cr.)
SPEA-H 433	Industrial Hygiene and Radiological Health	(3 cr.)
GEOL-G 430	Principles of Hydrology	(3 cr.)
GEOL-G 451	Principles of Hydrogeology	(3 cr.)
GEOL-G 551	Advanced Hydrogeology	(3 cr.)
GEOL-G 585	Environmental Geochemistry	(3 cr.)

Or other specialty courses with the approval of the graduate program advisor.

Certificate in Nonprofit Management

The Certificate in Nonprofit Management is a 15 credit hour program of study. The certificate is designed to serve the needs of individuals who would like exposure to the nonprofit sector and nonprofit management skills but who do not wish or need to pursue a degree in nonprofit management. The certificate complements other courses of study or career experience in such areas as social work, library science, public health, or business. Students pursuing a nonprofit management certificate gain an understanding of how to work in and with nonprofit organizations. This certificate is also available to students in the O'Neill Online Program.

Required Courses (9 credit hours)

SPEA-F 526	Financial Management for Nonprofit Organizations	(3 cr.)
SPEA-N 522	Human Resource Management in Nonprofit Organizations	(3 cr.)
SPEA-N 525	Management in the Nonprofit Sector	(3 cr.)

Electives (6 credit hours)

Two additional SPEA graduate courses are selected with the approval of the student's advisor. A sampling of current course titles includes:

- SPEA-M 602 Strategic Management of Public and Nonprofit Organizations (3 cr.)
- SPEA-N 521 Nonprofit and Voluntary Sector (3 cr.)
- SPEA-N 523 Civil Society and Public Policy (3 cr.)
- SPEA-N 534 NGO Management for International Development (3 cr.)
- SPEA-N 557 Proposal Development and Grant Management (3 cr.)
- SPEA-N 558 Fund Development for Nonprofit Organizations (3 cr.)

Certificate in Public Budgeting and Financial Management

The Certificate in Public Budgeting and Financial Management is a 15 credit hour program for those seeking graduate training in the fundamentals of budgeting and finance for government and nonprofit organizations. It is designed for pre-career students, including graduate students in other disciplines who seek to additional capacity-building in their educational program, and for in-service professionals who seek additional expertise in their work or who plan to change their professional roles. The program is for those who wish to acquire additional knowledge and skills in public financial management and control, governmental or nonprofit accounting, and public expenditure planning, management, and control. This certificate is also available to students in the O'Neill Online Program.

Required Courses (9 credit hours)

SPEA-F 542	Governmental Financial Accounting and Reporting	(3 cr.)
or		
SPEA-F 526	Financial Management for Nonprofit Organizations	(3 cr.)
SPEA-F 560	Public Finance and Budgeting	(3 cr.)
SPEA-V 517	Public Management Economics	(3 cr.)

Electives (6 credit hours)

Select two from the following courses:

SPEA-F 609	Seminar in Revenue Theory and Administration	(3 cr.)
SPEA-F 610	Government Budget and Program Analysis	(3 cr.)
SPEA-F 667	Seminar in Public Capital and Debt Theory	(3 cr.)

Certificate in Public Management

The Certificate in Public Management Program is a 15 credit hour program of study in public management. The certificate program is flexible enough to be adapted to the needs of precareer and in-service individuals. Graduate students in other disciplines can use the program to supplement their primary fields with course work in public management, possibly using the certificate courses as part or all of a doctoral or master's degree minor. Career employees of public and private sector agencies seeking courses in public management, and especially those changing from professional or technical roles to managerial roles, find the certificate program beneficial. This certificate is also available to students in the O'Neill Online Program.

Required Courses (9 credit hours)

SPEA-F 560	Public Finance and Budgeting	(3 cr.)
SPEA-M 561	Public Human Resources Management	(3 cr.)

SPEA-V 535	Managing and Leading in Public Affairs	(3 cr.)

Electives (6 credit hours)

Two additional SPEA graduate public affairs courses approved by the program director.

Note: Students interested in continuing on for the Master of Public Affairs degree should consider electing the two elective courses from the M.P.A. core; one of the courses recommended is V 506 Statistical Analysis for Effective Decision Making.

Certificate in Public and Nonprofit Evaluation

The Certificate in Public and Nonprofit Evaluation is a 15 credit hour online program. As it is an online program, it is expected students will complete the program in three semesters. Two courses in each of the first two semesters followed by one semester of one course. This certificate approaches program evaluation as a professional field and not simply a tool. As an additional professional credential, the certificate in evaluation will strengthen the capacity for recipients to utilize evidence driven approaches to assess the effectiveness of programs and services in the public, private, and nonprofit sectors.

Required Courses (9 credit hours)

SPCN-P 562	Public Program Evaluation	(3 cr.)
SPCN-V 506	Statistical Analysis for Effective Decision Making	(3 cr.)
SPCN-V 550	Designing Studies to Address Public Problems	(3 cr.)

Electives (6 credit hours)

Two of the following courses:

SPCN-M 561	Public Human Resources Management	(3 cr.)
SPCN-M 602	Strategic Management of Public and Nonprofit Organizations	(3 cr.)
SPCN-N 525	Nonprofit Management	(3 cr.)
SPCN-P 507	Data Analysis and Modeling for Public Affairs	(3 cr.)
SPCN-V 535	Managing and Leading in Public Affairs	(3 cr.)

Certificate in Rural Arts Adminstration

The Certificate in Rural Arts Administration is a 15 credit hour program of study. The Rural Arts Administration Certificate prepares students to manage and lead an arts organization in a rural setting, and an understanding of the specific challenges that come with rural arts development in the contemporary era. They will also be familiar with the changing economic and social environment of the rural Midwest, and the key public policy issues affecting rural development, and the arts.

Required Courses (9 credit hours)

AADM-Y 502	Organizational Behavior and the Arts	(3 cr.)
AADM-Y 551	Cultural Planning and Community Development	(3 cr.)
AADM-Y 750	Internship in Arts Administration	(0-3 cr.)

Electives (6 credit hours)

Choose any two courses from the following:

AADM-Y 500	Topics in Arts Administration	(3 cr.)
AADM-Y 504	Arts Organizations in the Public and Private Sectors	(3 cr.)
AADM-Y 505	Programming the Performing Arts	(3 cr.)
AADM-Y 506	Curating for Museums and Galleries	(3 cr.)
AADM-Y 508	Managing Performing Arts Organizations	(3 cr.)
AADM-Y 511	Performing Arts Center Management	(3 cr.)
AADM-Y 515	Financial Management for the Arts	(3 cr.)
AADM-Y 525	Museum Management	(3 cr.)
AADM-Y 530	Audience Development and Marketing the Arts	(3 cr.)
AADM-Y 550	Practicum in Arts Administration	(0-3 cr.)
AADM-Y 558	Fund Development for Nonprofit Organizations	(3 cr.)
AADM-Y 559	Public Policy and the Arts	(3 cr.)
AADM-Y 562	Legal Issues in the Arts	(3 cr.)

Certificate in Social Entrepreneurship

The Certificate in Social Entrepreneurship is an 18 credit hour program of study. The certificate is a cooperative program between the School of Public and Environmental Affairs and the Kelley School of Business and is available only for students enrolled in the M.P.A. or M.B.A. programs. The Social Entrepreneurship Certificate prepares students for innovatively approaching public needs with a combination of entrepreneurial practices and social purposes— through the for-profit, nonprofit, and governmental sectors.

Required Courses (6 credit hours)

SPEA-V 559	Principles and Practices of Social Entrepreneurship	(3 cr.)
BUS-W 508	Social Entrepreneurship	(1.5 cr.)
BUS-W 510	Sustainability and Green Business	(1.5 cr.)

Electives (9 - 12 credit hours)

Nine credit hours required from list below, or other courses, as approved by directors of the certificate program. At least 3 credit hours must be taken at school other than one in which student is enrolled

AADM-Y 511	Performing Arts Center Management	(3 cr.)
AADM-Y 525	Museum Management	(3 cr.)
AADM-Y 530	Audience Development and Marketing the Arts	(3 cr.)
AADM-Y 535	Arts Administration and the Cultural Sector	(3 cr.)
SPEA-F 510	Government Regulation in Market Economics	(3 cr.)
SPEA-F 526	Financial Management for Nonprofit Organizations	(3 cr.)
SPEA-F 542	Government Financial Accounting and Reporting	(3 cr.)
SPEA-F 560	Public Finance and Budgeting	(3 cr.)
SPEA-I 516	Public Management Information Systems	(3 cr.)
SPEA-I 519	Database Management Systems	(3 cr.)
SPEA-L 568	Management of Local Government Services	(3 cr.)
SPEA-L 622	Local Economic Development	(3 cr.)
SPEA-M 504	Public Organizations	(3 cr.)
SPEA-M 547	Negotiation and Dispute Resolution for Public Affairs	(3 cr.)
SPEA-M 561	Public Human Resources Management	(3 cr.)
SPEA-M 602	Strategic Management of Public and Nonprofit Organizations	(3 cr.)
SPEA-N 521	The Nonprofit and Voluntary Sector	(3 cr.)
SPEA-N 522	Human Resource Management in Nonprofit Organizations	(3 cr.)
SPEA-N 525	Management in the Nonprofit Sector	(3 cr.)
SPEA-N 544	Marketing for Nonprofit Organizations	(3 cr.)
SPEA-N 558	Fund Development for Nonprofits	(3 cr.)
SPEA-P 539	Management Science for Public Affairs	(3 cr.)
SPEA-P 541	Benefit Cost Analysis	(3 cr.)
SPEA-P 562	Public Program Evaluation	(3 cr.)
SPEA-V 535	Managing and Leading in Public Affairs	(3 cr.)
BUS-F 509	Financial Analysis for Corporate Decisions	(1.5 cr.)
BUS-F 517	Venture Capital and Entrepreneurial Finance	(1.5 cr.)
BUS-J 501	Developing Strategic Capabilities	(1.5 cr.)
BUS-M 511	Marketing Performance and Productivity Analysis	(1.5 cr.)
BUS-M 512	Marketing Strategy (with M511, 4.5 cr.)	(1.5 cr.)
BUS-M 521	Implementation of Marketing Strategies	(1.5 cr.)
BUS-P 510	Service Operations	(1.5 cr.)
BUS-P 552	Project Management	(1.5 cr.)
BUS-P 561	Supply Chain Management and Technologies	(1.5 cr.)
BUS-S 509	Information Systems in Modern Organizations	(1.5 cr.)
BUS-S 510	Managing the Net-Enabled Organization	(1.5 cr.)

BUS-S 520	Managing and Designing Data Base Systems	(1.5 cr.)
BUS-W 503	Creativity and Innovation: Generating New Venture Ideas	(1.5 cr.)
BUS-W 504	New Venture Business Planning	(1.5 cr.)
BUS-W 506	Entrepreneurship Leadership and Practice	(1.5 cr.)
BUS-W 511	Venture Strategy	(1.5 cr.)
BUS-W 516	Organizational Development and Change: The Change Agent	(1.5 cr.)
BUS-W 532	Organization Design Alternatives	(1.5 cr.)
BUS-W 574	Corporate Entrepreneurship and Innovation	(1.5 cr.)

Social Entrepreneurship Internship (0-3 credit hours)
An internship practicum is also required that can be satisfied by SPEA-V 585 Practicum in Public Affairs (0-3) credit hours, BUS-X 523 and BUS-X 524 Enterprise Experience I and II, or approved experiential credit. The internship consists of:

- A two-month project development period the semester before the internship.
- A three-month full-time (40 hour per week) internship on site at the host organization, agency, or business to execute the project.
- A final evaluation of the project, related to social entrepreneurial approaches.

Executive Education Program

The Executive Education Program is one of the most prestigious leadership programs in the nation. Offered through the O'Neill School of Public and Environmental Affairs, the Executive Education Program works with the government, nonprofit agencies, and the private sector to prepare leaders and managers to meet today's challenges and anticipate tomorrow's opportunities.

The Executive Education Program offers graduate level programs for the United States Navy and nonprofit organizations. Graduate programs include the Master of Public Affairs (M.P.A.), the Public Management Certificate (P.M.C.), and the Nonprofit Management Certificate (N.P.M.C.).

In 1985, the Executive Education Program formed a partnership with the American Association of State Highway and Transportation Officials (AASHTO), the leading transportation organization in the United States. Together they created two institutes to challenge and educate transportation leaders, the National Transportation Leadership Institute and the Advanced Leadership Institute, two of the most influential leadership development programs for transportation officials.

In partnership with the Indiana Hospital Association (IHA), the Executive Education Program created a 10-course management curriculum leading to a Certificate in Healthcare Management. Through the IHA Management Institute, managers are equipped with the knowledge, skills, and abilities to help them lead their organizations in a rapidly changing environment. Another partnership is with the Indiana Association of Cities and Towns (IACT). The Executive Education Program was engaged by IACT to develop and deliver professional development programs just for mayors from 2008–2011.

O'Neill's Executive Education Program also offers customized leadership and management programs for local, regional, national, and international clients.

Centers & Institutes

O'Neill School Centers and Initiatives

Student Organizations & Services

Organizations
O'Neill School of Public and Environmental Affairs Alumni Association

Services
Business–SPEA Information Commons

Career Hub

Honor Societies
Alpha Phi Sigma

Pi Alpha Alpha

O'Neill Alumni Association

O'Neill has a strong commitment to its alumni and considers them among our most valued resources. The O'Neill Office of Alumni Relations strives to maintain lifelong connections with our network of over 32,000 alumni. When O'Neill graduates join the Indiana University Alumni Association, they automatically become members of the O'Neill Alumni Association. The mission of the O'Neill Alumni Association is to inspire and cultivate dynamic interactions among alumni, the school, and current students for the betterment of O'Neill and the professions it serves. Some activities of the Association include the Capitol Hill Colloquium, annual social gatherings in Indianapolis, Denver, Chicago and Washington D.C., and networking and educational opportunities for O'Neill alumni- nationally and globally. The association is also a sponsor of the O'Neill Magazine, our e-newsletter, and manages an endowed scholarship that is awarded annually to O'Neill undergraduate and graduate students. The O'Neill Alumni Association is governed by an elected board of directors comprised of O'Neill Alumni who represent diverse academic and geographic backgrounds. For more information, please visit https://oneill.indiana.edu/career-services/alumni/index.html.

Alpha Phi Sigma

Alpha Phi Sigma is the national criminal justice honor society. The society recognizes scholastic excellence by students in the field of criminal justice. It was founded in 1942 and was admitted to the Association of College

Honor Societies in 1980. Membership of graduate students is limited to those who have a bachelor's degree in criminal justice or who are currently doing graduate work in this field. A minimum grade point average of 3.4 is required of graduate students seeking membership in Alpha Phi Sigma.

Pi Alpha Alpha

Pi Alpha Alpha is the national honor society for schools of public affairs and administration. The society acknowledges outstanding scholarship and contributions to these fields. It was founded in 1972 by the Network of Schools of Public Policy, Affairs, and Administration and the National Association of Schools of Public Affairs and Administration (NASPAA) to honor those whose performance in public affairs has been distinguished. Indiana's is a charter chapter of Pi Alpha Alpha. Membership in Pi Alpha Alpha is comparable to membership in Phi Beta Kappa for liberal arts graduates. A person evaluating credentials in the various fields of public service should recognize the professional quality such a membership represents.

O'Neill graduate students can qualify for membership by being in the top 20 percent of their M.P.A. or M.S.E.S. class, with a minimum overall grade point average of 3.5, a 3.7 in at least 50 percent of all required courses, and by having completed 50 percent of the required course work (i.e., 24 to 30 credit hours).

Any doctoral student who has successfully passed the qualifying examination is eligible. Alumni are eligible if they meet all the requirements of student membership but graduate before induction by the Indiana chapter.

Any full-time faculty member of a NASPAA-member institution that offers course work in a public affairs or administration degree program and at which a Pi Alpha Alpha chapter is located is eligible for membership. Honorary membership is available to any person who has achieved distinction in public administration and who has the qualities that Pi Alpha Alpha fosters.

Career Education and Professional Advancement Office

O'Neill's Career Education and Professional Advancement Office delivers a wide range of career/professional development programs and services for graduate students. Experienced Career Advisors meet individually with students as they begin their respective first semesters to plot their career timelines and orient them to the multiple career resources and services available to them.

- Individual career advising
- Self-assessment tools, such as the MBTI and StrengthsQuest
- Workshops and employer information sessions
- Critiquing of resumes, cover letters, and related application materials
- Assist with the formulation of internship and job-search strategies
- Training in career/industry research and interviewing
- Networking with professionals, including O'Neill Alumni/ae and employers
- Individual strategies for making on- and off-campus recruiting opportunities work effectively
- Access to O'Neill Careers, our internship/job database specifically designed to serves O'Neill SPEA students
- Quiet interview rooms available for Skype and phone interviews with employers
- An extensive collection of web-based career/internship resources that covers opportunities in each area of academic concentration at O'Neill

The Employer Relations team continually cultivates strong recruiting relationships with key employers representing the Public, Nonprofit, and Private sectors of the U.S. and global economies. Many of these employers include O'Neill Alumni/ae who actively participate in signature recruiting and networking events, both on- and off-campus. Our annual Career Catalysts attract alumni and employer representatives from various locations, such as Washington DC, who have a vested interest in connecting with current students. Each fall the Career Education and Professional Advancement Office stages its annual Career Expo to bring employers and SPEA students together to share internship and job opportunities. Add to these our numerous on-campus career and internship information sessions with alumni and recruiters – the Career Education and Professional Advancement Office and O'Neill SPEA community serves as an important conduit to your post-O'Neill SPEA career direction.

O'Neill SPEA Career Education and Professional Advancement Office
SPEA 200
812.855.9639

careerhb@indiana.edu

Business–SPEA Information Commons

The Business-SPEA Information Commons (IC) is part of the IU Libraries system in Bloomington. It provides collections, services, and facilities to support the teaching, learning, and research of the Kelley School of Business and the O'Neill School of Public and Environmental Affairs. The IC provides access to an extensive collection of print and digital resources. Detailed information about the Business-SPEA IC can be found at its website.

Academic Policies & Procedures

The following academic regulations of the O'Neill School of Public and Environmental Affairs are applicable to all graduate programs. Additional campus-specific policies may also apply.

Confidentiality of Student Records

In accordance with Indiana University regulations, student records are confidential and are available to other persons only under specific conditions as outlined in university regulations.

Student Rights

Rights of students are included in a handbook available on each campus. Due process is followed in the event of disciplinary or other actions.

Student Responsibility
Students are responsible for planning their own academic programs and for meeting the requirements for their degree or certificate programs. Faculty and academic advisors may assist students in meeting their responsibilities.

Applicability of Degree and Certificate Requirements
Students may choose to complete either the specific degree and certificate requirements published in the appropriate bulletin at the time of entry into the university or those in the bulletin current at the time of graduation.

Residency Requirements—Master's and Certificate Programs
The campus at which a student completes the majority of required course work will certify and award the degree or certificate, provided the campus is authorized to grant that degree or certificate. The student must have been admitted by the O'Neill SPEA campus awarding the degree or certificate.

Residency Requirements—Doctoral Programs
Students must obtain prior approval from the O'Neill SPEA director of their specific doctoral program for any courses they propose to take at another Indiana University campus. The director of the Ph.D. program follows the policies of the University Graduate School relating to work done at Indiana University campuses other than Bloomington.

Academic Standing
Students are considered to be in good standing during any semester in which their academic grade point average is at least 3.0 (B) for both their last semester's course work and for the cumulative average of all course work completed. Only courses with grades of C (2.0) or above may be counted toward degree requirements. However, grades below C are used in computing the cumulative grade point average, even if a course is repeated and a higher grade is earned. Students must be in good academic standing in order to graduate.

Academic Probation
Students are placed on probation following a semester in which their cumulative or semester grade point average falls below 3.0. Students on probation or admitted provisionally are required to attain an average of at least 3.0 for all work completed by the end of the next semester. Failure to do so is cause for dismissal.

Grading System
The official grading system of the O'Neill School of Public and Environmental Affairs is as follows:

A =4.0	D+ =1.3
A– = 3.7	D =1.0
B+ = 3.3	D– = 0.7
B= 3.0	I = Incomplete
B– = 2.7	F = Failed
C+ = 2.3	W = Withdrawn
C= 2.0	R = Deferred
C– = 1.7	NR = No grade reported

Only grades of C (2.0) or better can be used toward graduation requirements.

Incomplete
A grade of Incomplete must be removed within the time specified by the instructor of the course; if not, the grade automatically changes to an F one calendar year after the Incomplete was given.

Withdrawals
Because deadlines for withdrawal from courses may vary by campus and/or school, students should check with the current campus Schedule of Classes to verify deadlines and procedures.

Intercampus Transfer
Students enrolled in the O'Neill School of Public and Environmental Affairs at any campus of Indiana University may transfer to O'Neill on another campus, provided they are in good standing.

Transfer of Credit
A maximum of 9 credit hours of appropriate graduate course work with grades of B (3.0) or higher may be transferred from degree programs of other academic units within Indiana University or other accredited colleges and universities and applied to O'Neill master's level degree programs. The transfer must be approved by the appropriate graduate program director.

Credit Earned in IU Nondegree Status
Not more than 12 hours of graduate credit completed as a nondegree student may be credited toward an O'Neill graduate degree. Not more than 9 hours of O'Neill graduate credit earned as a nondegree student may be credited toward O'Neill certificate programs.

Course Waivers
Requests for waiver of specific courses or requirements on the basis of previous course work are to be submitted in writing to the appropriate faculty member or program director.

Program Deviations
Requests for deviation from O'Neill SPEA programs or school requirements are granted only by written approval from an academic advisor and a campus or program director. Disposition by the O'Neill SPEA program or campus director is final.

Minimum Credit Hours
To qualify for the M.P.A. or M.S.E.S. degree, students must complete a minimum of 24 of the required 48-51 credit hours of graduate O'Neill SPEA courses at Indiana University. Credit granted to transfer students and those exercising the Mid-Career Option or the Prior Professional Experience does not reduce the number of courses taken in O'Neill SPEA below this 24 credit hour minimum.

Academic Integrity
Academic integrity requires that students take credit only for their own ideas and efforts. Misconduct, including cheating, fabrication, plagiarism, interference, or facilitating academic dishonesty, is prohibited because it undermines the bonds of trust and cooperation among members of this community and between us and those who may depend on our knowledge and integrity.

Complete details are contained in the Indiana University *Code of Student Rights, Responsibilities, and Conduct.*

Academic Appeals

Students may appeal academic decisions made by O'Neill faculty members. Attempts to resolve such issues should be made first at the class/instructor level. If necessary, written appeals should be submitted to relevant program directors. Appeals must be submitted within 14 days of the final grade being posted. Please contact the Master's Program Office for additional details on the appeal process.

Graduate Courses

- Arts Administration
- Criminal Justice - For a complete list of courses please refer to the Indianapolis O'Neill website.
- Environmental Science
- Public Affairs
- O'Neill Online

Arts Administration Courses

Environmental Science Courses

SPEA-E 410 Introduction to Environmental Toxicology (3 cr.)

SPEA-E 431 Water Supply and Wastewater Treatment (3 cr.)
SPEA-E 451 Air Pollution and Control (3 cr.)

Public Affairs Courses

O'Neill Online Courses

Faculty

Meet our current and emeriti faculty