New Program Proposal: Graduate Degree Program

This form should be used to seek SUNY's approval and the State Education Department's (SED) registration of a proposed new academic program leading to a graduate degree. Approval and registration are both required before a proposed program can be promoted or advertised, or can enroll students. The campus Chief Executive or Chief Academic Officer should send **a signed cover letter and this completed form** (unless a different form applies[1]), which should **include appended items** that may be required for Sections 1 through 10 and MPA-1 of this form, to the SUNY Provost at program.review@suny.edu. The completed form and appended items should be sent as a single, continuously paginated document.[2] Guidance on academic program planning is available at http://www.suny.edu/provost/academic_affairs/app/main.cfm.

Table of Contents

NOTE: Please update this Table of Contents automatically after the form has been completed. To do this, put the cursor anywhere over the Table of Contents, right click, and, on the pop-up menus, select "Update Field" and then "Update Page Numbers Only." The last item in the Table of Contents is the List of Appended and/or Accompanying Items, but the actual appended items should continue the pagination.

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[1]Use a different form if the proposed new program will lead to an undergraduate degree or any credit-bearing certificate; be a combination of existing registered programs (i.e. for a multi-award or multi-institution program); be a breakout of a registered track or option in an existing registered program; or lead to certification as a classroom teacher, school or district leader, or pupil personnel services professional (e.g., school counselor).

[2]This email address limits attachments to 25 MB. If a file with the proposal and appended materials exceeds that limit, it should be emailed in parts.

Section 1. General Information	
Item	**Response** *(type in the requested information)*
a) **Institutional Information**	Date of Proposal: March 21, 2014
	Institution's 6-digit SED Code: **211000**
	Institution's Name: Binghamton University
	Address: PO Box 6000, Binghamton NY 13902-6000
	Dept of Labor/Regent's Region: Southern Tier
b) **Program Locations**	List each campus where the entire program will be offered (with each institutional or branch campus 6-digit SED Code): 211000
	List the name and address of off-campus locations (i.e., extension sites or extension centers) where courses will offered, **or check here [XX] if not applicable**:
c) **Proposed Program Information**	Program Title: Sustainable Communities
	Award(s) (e.g., M.S., Ph.D.): M.A. and M.S.
	Number of Required Credits: Minimum [38] If tracks or options, largest minimum []
	Proposed HEGIS Code: 2201
	Proposed 6-digit CIP 2010 Code: 30.3301
	If the program will be accredited, list the accrediting agency and expected date of accreditation:
	If applicable, list the SED professional licensure title(s)[3] to which the program leads:
d) **Contact Person for This Proposal**	Name and title: Susan Strehle, Vice Provost and Dean of the Graduate School
	Telephone:607-777-2070 E-mail: sstrehle@binghamton.edu
e) **Chief Executive or Chief Academic Officer Approval**	**Signature affirms that the proposal has met all applicable campus administrative and shared governance procedures for consultation, and the institution's commitment to support the proposed program.** *E-signatures are acceptable.*
	Name and title: Donald G. Nieman, Executive Vice President and Provost
	Signature and date:
	If the program will be registered jointly[4] with one or more other institutions, provide the following information for each institution:
	Partner institution's name and 6-digit SED Code:
	Name and title of partner institution's CEO:
	Signature of partner institution's CEO (or **append** a signed letter indicating approval of this proposal):

Version 2013-10-15

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[3] If the proposed program leads to a professional license, a specialized form for the specific profession may need to accompany this proposal.

[4] If the partner institution is non-degree-granting, see SED's CEO Memo 94-04.

Section 2. Program Information

2.1. Program Format

Check all SED-defined format, mode and other program features that apply to the **entire program**.

a) **Format(s):** [X]Day   [ ]Evening   [ ]Weekend   [ ]Evening/Weekend   [ ]Not Full-Time

b) **Modes**: [X]Standard   [ ]Independent Study   [ ]External   [ ]Accelerated   [ ]Distance Education
NOTE: If the program is designed to enable students to complete 50% or more of the course requirements through distance education, check Distance Education, see Section 10, and append a Distance Education Format Proposal.

c) **Other**: [ ] Bilingual [ ] Language Other Than English [ ] Upper Division [ ] Cooperative [ ] 4.5 year [ ] 5 year

2.2. Diploma Program

NOTE: This section is not applicable to a program leading to a graduate degree.

2.3 Program Description, Purposes and Planning

a) What is the description of the program as it will appear in the institution's catalog?

The Sustainable Communities masters degree program prepares graduates to understand and shape the complex issues encountered by local governments, non-profit organizations, and businesses as they make decisions that impact the ability of communities to pursue sustainable futures. Through a transdisciplinary approach integrating classroom learning, academic research, and community engagement, graduates will be equipped to undertake technical and policy analysis around subjects of environmental policy, economic vitality, and social equity. The program addresses a public need for trained sustainability professionals, who are prepared to exercise leadership in communities and organizations developing policies, plans, and practices that promote the sustainable use of human and natural resources.

b) What are the program's educational and, if appropriate, career objectives, and the program's primary student learning outcomes (SLOs)? *NOTE: SLOs are defined by the Middle States Commission on Higher Education in the Characteristics of Excellence in Higher Education as "clearly articulated written statements, expressed in observable terms, of key learning outcomes: the knowledge, skills and competencies that students are expected to exhibit upon completion of the program."*

The program aims to prepare well-educated, contributing professionals who can analyze, lead, and serve communities. The career outcomes vary widely and range from city planning and community development to environmental consulting and the GIS analysis of public health trends. The program will help to meet the growing demand for human- and resource-sustainability managers, coordinators, and directors in public and nonprofit sectors. Student learning outcomes include the following:
1. Comprehensive knowledge of sustainability principles (environmental protection, economic vitality, and social equity) with a focus on community level actors (e.g. local governments, non-profit organizations, and small businesses). This includes ecology and environmental science, local and organizational governance, an appreciation of normative values for sustainability, and the ability to think critically across complex systems.
2. Ability to apply a range of methodological skills in the pursuit of evidence-based decision making.
3. Advanced knowledge in a particular area of interest
4. Ability to link knowledge to practice and policymaking
5. Ability to communicate and interact with diverse stakeholders in a professional setting

Students will develop the practical and critical thinking skills to succeed in career areas such as:

- Pursuit of a PhD in public administration, planning, environmental studies, or related fields
- Entry into local government positions, such as land use planner, municipal administrator, or sustainability coordinator. In a 2010 survey of local governments more than one-quarter of U.S. municipalities and counties employ a staff member dedicated to sustainability.[5]
- Entry into positions with non-profit organizations, which are among the most important drivers of environmental protection, social equity, and economic development at the local and regional levels
- Entry into policy and public outreach positions with businesses. According to a 2011 McKinsey Global study, almost two-thirds of corporations include sustainability in the mission and values with more than half integrating the concept into strategic planning and recognizing the economic benefits of sustainability.
- Appointment to policy analyst positions with research organizations focused on issues of sustainability and governance.

c) How does the program relate to the institution's and SUNY's mission and strategic goals and priorities? What is the program's importance to the institution, and its relationship to existing and/or projected programs and its expected impact on them? As applicable, how does the program reflect diversity and/or international perspectives? For doctoral programs, what is this program's potential to achieve national and/or international prominence and distinction?

The latest Binghamton University strategic plan, *The Road Map to Premier*, identifies a mission combining academic excellence and public service: "Binghamton University is a premier public university dedicated to enriching the lives of people in the region, state, nation and world through discovery and education and to being enriched by partnerships with those communities." In the fall of 2012, as part of the strategic plan's development, Provost Donald Neiman convened a faculty committee to identify five Transdisciplinary Areas of Excellence (TAEs) that emerge from existing strengths in research at Binghamton University. Sustainable Communities is one of the five identified areas in which the University has significant capacity and can achieve international prominence. At the same time, our proposal to increase graduate enrollments through strong multi-disciplinary master's programs has been approved by SUNY-system and the NYS Governor's office.

The MS and MA degrees in Sustainable Communities will advance the dual goals of enriching the lives of citizens and advancing the University's prominence in research. The program will produce graduates who will work with communities and local organizations to enhance their environmental, economic, and social well being. Binghamton University is particularly well suited to offer these degrees because of its strengths in the multiple disciplines that contribute to theories, polices, and practices that make up sustainable communities. These include, among others, local governance, smart energy, environmental studies, geography and urban planning, geology, anthropology, social work, and economics. These areas of current faculty strength are slated to receive new faculty positions, funding for colloquia and conversations across the disciplines, and other stimuli for advanced research collaborations.

The inherent transdisciplinarity of the Sustainable Communities field makes it an ideal educational forum through which to examine complex and rapidly evolving real-world issues. Communities are complex and dynamic; they require nurturing to sustain core elements such as environmental quality, neighborhood safety, good schools, accessible healthcare and engaged citizens. By combining the perspectives and methodologies of several disciplines, we can examine the many dimensions of sustainability and devise powerful solutions to complex

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[5] Homsy, George C. and Warner, Mildred E. [Survey of municipal and county governments in New York State]. Unpublished data.

problems. Collaborations among faculty from many disciplines will enable a deeper understanding of past, present and future developments in sustainability. The program will be located in the Graduate School in order to enhance the transdisciplinary collaborations that will strengthen faculty, students, and the program and produce graduates ready to make significant contributions in the field.

d) How were faculty members involved in the program's design?

A TAE steering committee provides leadership for new research initiatives in Sustainable Communities. Consisting of members from social work, management, geology, anthropology, education, geography, public administration, philosophy, nursing, and biology, this steering committee has generated rich connections between disciplines for grant proposals, conferences, and research opportunities. It also led to the proposal to establish these new degrees, a master of arts and a master of science in the field of Sustainable Communities.

The program described in this proposal was designed by faculty from several departments in different schools, including those from public administration (in the College of Community and Public Affairs), from geography (Harpur College of Arts and Sciences), and environmental studies (Harpur College of Arts and Sciences). Faculty members in other units have participated in discussions of the program and have offered to open their sustainable community-related courses to degree candidates in the new program.

Once the program begins, faculty members will continue to oversee and shape various aspects of the new degrees (e.g. admissions, assessing student programs, course review and development, reviewing information about student placement, etc.). These efforts will be conducted by the Sustainable Communities Program Committee, made up of one faculty member each from Environmental Studies, Geography, and Public Administration. The chair of each department will recruit and appoint an appropriate member to the committee.

e) How did input, if any, from external partners (e.g., educational institutions and employers) or standards influence the program's design? If the program is designed to meet specialized accreditation or other external standards, such as the educational requirements in **Commissioner's Regulations for the profession**, append a side-by-side chart to show how the program's components meet those external standards. If SED's Office of the Professions requires a **specialized form** for the profession to which the proposed program leads, append a completed form at the end of this document.

Faculty involved in the design of the program consulted with Dr. David Hassenzahl, Founding Dean of the Falk School of Sustainability at Chatham University and an expert in environmental policy, climate change, and risk analysis; and with Dr. Richard Smardon, Distinguished Service Professor at SUNY College of Environmental Science and Forestry and an expert in environmental planning, sustainable development and landscape management. These consultants came to campus in October 2013 for a conference and met with some of the program designers. The program has also undergone outside evaluation by reviewers approved by the SUNY system: Dr. Daniel Fiorino, Distinguished Executive in Residence and Director of the Center for Environmental Policy at American University; and Dr. Graham Tobin, Professor of Geosciences at the University of South Florida. They visited on November 19-21, 2014; their reports are appended as Appendix D.

f) Enter anticipated enrollments for Years 1 through 5 in the table below. How were they determined, and what assumptions were used? What contingencies exist if anticipated enrollments are not achieved?

Year	Anticipated Headcount Enrollment			Estimated FTE
	Full-time	Part-time	Total	
1	5	0	5	5
2	10	1	11	10
3	16	2	18	18
4	23	2	25	25
5	28	2	30	30

We assume that most students will attend full-time and complete the degree in two years; a few will attend part-time and complete in three years. Initially, we assume that 10% of the students who enroll will be from out of state, but by year five, that number will rise to 25%. If these anticipated enrollments are not achieved, the program will grow more slowly and will contain a larger portion of New York State students.

g) Outline all curricular requirements for the proposed program, including prerequisite, core, specialization (track, concentration), internship, capstone, and any other relevant component requirements, but do not list each General Education course.

Core Courses (16 credits)
- SUST 500 - Sustainable Communities I (4 credits)
- SUST 510 - Sustainable Communities II (4 credits)
- SUST 520 - Research Methods (4 credits)
- SUST 530 - Sustainability Colloquium (1 credit) – May be repeated; offered every semester.

Required courses (12-16 credits)
- Students will select one course from each of three approved subject areas course lists: Environmental Policy, Economic Development and Social Equity (three courses at three or four credits each)
- Students will select an advanced methods course from an approved list (one course at three or four credits)

Sustainability Electives (6-8 credits)
- Students will select at least two electives related to their interests in sustainability (two courses at three or four credits each)

Thesis, capstone/exit project (4 credits)
- SUST 601 MS Thesis Project – Students work with their advisor and a second reader over the course of the program to develop a research masters thesis. This project must be presented and defended in the spring of the second year.

    OR

- SUST 602 MA Capstone Project – Students work with their advisor and a second reader over the course of the program on a professional or policy project. This project must be presented and defended in the spring of the second year.

h) Program Impact on SUNY and New York State

h)(1) *Need:* **What is the need for the proposed program in terms of the clientele it will serve and the educational and/or economic needs of the area and New York State? How was need determined? Why are similar programs, if any, not meeting the need?**

The growing interest in sustainability is well documented. Government and academic leaders have focused on the notion of "sustainable communities," emphasizing that environmental issues are inextricably intertwined with economic viability and social equity. The sustainable communities approach is built upon public/private partnerships, local/regional collaboration, community capacity building and consensus building, and

mechanisms to enforce collective decisions.[6] The term "sustainable communities" gained national prominence when the Obama administration created the Partnership for Sustainable Communities, a federal interagency partnership between EPA, HUD and DOT. In October 2010, the Partnership for Sustainable Communities announced a series of grants and other assistance totaling $409.5 million in funding to support livability investments in over 200 communities across the country. At the international level, the International City/County Management Association (ICMA) has developed a Center for Sustainable Communities to identify and provide best practices, tools, and resources that help local governments build sustainable communities.

Nearly two-thirds of large municipalities (greater than 50,000 in population) have staff dedicated to sustainability while one-in-five smaller cities and towns employ sustainability staff.[7] New York State municipalities seem to lack behind with only 16 percent designating some staff time for environmental sustainability; though many have planned for sustainability issues, such as natural hazards (52.3%), watershed protection (39.5%), energy siting or generation (22.7%), or climate change mitigation (8.2%).[8]

There are currently no programs in the SUNY system at the graduate level in Sustainable Communities, Sustainable Development, or Sustainability. Stony Brook offers a BA in Sustainability Studies, SUNY ESF offers a BS in Sustainable Energy Management and Monroe Community College offers an AS in Sustainability Studies. The most closely related program in the SUNY system is SUNY ESF's Masters in Environmental Science. The lack of programs focusing on broad, multi-disciplinary, collaborative approaches to sustainability presents an opportunity for Binghamton University to offer the first program of its kind in the SUNY system.

Throughout the US, only two universities offer degrees in a field specifically called Sustainable Communities. Northern Arizona University offers a master's degree and Dominican University of California offers a bachelor's degree. A database of educational institutions offering degrees in sustainability and related subjects appears in Sustainability: Science, Practice and Policy, an open-access journal of ProQuest (http://sspp.proquest.com/sspp_institutions/display/university programs). This database lists 47 colleges and universities in the US and Canada that offer master's degrees and 63 institutions that offer bachelor's degrees in this rapidly growing field, where titles have not yet been standardized. The names of these degrees include Sustainable Development, Sustainability, Environmental Sustainability, Sustainability Studies and Sustainability Management. Some of the programs are more specific, such as Sustainable Agriculture, Sustainable Energy, and Sustainable Engineering. Other programs do not contain the words sustainable or sustainability in their titles; the most common in this category are programs in Environmental Science or Environmental Studies.

In New York, The New School offers an MS in Environmental Policy and Sustainability Management; Bard College offers a Sustainability MBA; City College of New York offers a master's in Sustainability; Columbia University offers master's degrees in Sustainable Development and Sustainability Management; Ithaca College offers a certificate in Sustainability Leadership; Rochester Institute of Technology offers a master's in Sustainable Systems and a PhD in Sustainability. Of these programs, the program at City College is most similar to the one proposed here. An important distinction, however, is that the City College program is focused primarily on urban areas, while the program we propose will encompass urban and rural communities of all sizes. The urgent need for sustainability professionals, the wide geographic spread of the programs across New York State, and the unique, multi-disciplinary focus of our proposed program make it unlikely that our program would have a significant impact on the enrollment at other institutions.

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6 Mazmanian, Daniel A., and Michael E. Kraft. 2009. *Toward Sustainable Communities: Transition and Transformations in Environmental Policy* 2nd edition. Cambridge, MA: MIT Press.

7 Svara, James H. 2011. "The Early Stage of Local Government Action to Promote Sustainability." In *The Municipal Year Book 2011*, 43–60. Washington, DC: ICMA Press.

8 Homsy, George C. and Warner, Mildred E. [Survey of municipal and county governments in New York State] Unpublished raw data.

h)(2) *Employment***: For programs designed to prepare graduates for immediate employment, use the table below to list potential employers of graduates that have requested establishment of the program and state their specific number of positions needed. If letters from employers support the program, they may be appended at the end of this form.**

From 2010 to 2014, sustainability jobs have more than doubled with the most commonly advertised job titles including: sustainability consultant, sustainability coordinator, sustainability intern, director of sustainability, sustainability analyst, and energy sustainability specialist.[9] The Bureau of Labor Statistics (BLS) does not track jobs in "sustainability," but does offer insight into various components of the field. For example, environmental scientists and specialists jobs are projected to have faster than average growth (15%) over the 2012 to 2022 decade. The increased focus on sustainability and sustainable development will also lead to an increasing demand for geographers to understand the impacts of humans on the environment, economy, and each other. The BLS expects the opportunities for geographers to jump 29% over the ten-year period. More policy focused planners will see a 10% increase in demand as they wrestle with issues of sustainable development. Related degrees in social science will see a 15% increase with economists growing 14%. Students in the MS and MA degrees in Sustainable Communities will bridge many of those professions in the both the government and non-profit sectors.[10]

The National Career Development Association points students interested in sustainability to dozens of careers including: sustainability policy analyst, sustainable neighborhoods coordinator, socially responsible investment advisor, sustainable transportation planner, and recycling coordinator.[11] Within New York, these trends have translated into new job descriptions in local government such as sustainable development planner (City of Binghamton), sustainability coordinator (Cities of New Rochelle and Syracuse), and director of planning and sustainability (City of Syracuse). Colleges and universities are developing sustainability offices and a host of nonprofit organizations have sprung up throughout New York promoting sustainability at the community level (e.g. Binghamton Regional Sustainability Coalition, Sustainable Tompkins, Cool Rochester). Although the focus of these degrees will be to prepare graduates for jobs in the public and nonprofit sectors, private sector organizations are also looking for sustainability managers. Several of the top 20 employers in New York State emphasize sustainability: for example, Wegman's has a sustainability coordinator; IBM lists "sustainability" among the services it provides to customers, including cities; and even Walmart is actively seeking a director of sustainability. Employment opportunities, especially in this tight job market, will translate into student demand for programs that enable students to be competitive for these new jobs.

Employer	Need: Projected positions	
	2012	**2022**
Environmental scientists and specialists	90,000	103,200
Urban and regional planners	38,700	42,700
Geographers	1,700	2,200
Economists	16,900	19,200
Sociologists	2,600	3,000
Source: Occupational Outlook Handbook : U.S. Bureau of Labor Statistics. 2014. Accessed April 23. http://www.bls.gov/ooh/		

h)(3)   Similar Programs: Use the table below to list similar programs at other institutions, public and independent, in the service area, region and state, as appropriate. Expand the table as needed. *NOTE: Detailed program-level information for SUNY institutions is available in the Academic Program Enterprise*

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9 Lombardi, Abby. 2014. "Is Sustainability the Next Hot Job Skill?" Wanted Analytics. March 3. http://www.wantedanalytics.com/analysis/posts/is-sustainability-the-next-hot-job-skill.

[10] Occupational Outlook Handbook : U.S. Bureau of Labor Statistics. 2014. Accessed April 23. http://www.bls.gov/ooh/.

[11] Rowe, Debra. 2013. "Green and Sustainability Jobs and Career Resources." National Career Development Association. December 1. http://www.ncda.org/aws/NCDA/pt/sd/news_article/83053/_PARENT/layout_details_cc/false?sthash.YUzmmj0f.mjjo.

System (APES) or Academic Program Dashboards. Institutional research and information security officers at your campus should be able to help provide access to these password-protected sites. For non-SUNY programs, program titles and degree information – but no enrollment data – is available from SED's Inventory of Registered Programs.

There are no similar programs in the area, region or state. In response to our statement in the Letter of Intent that no other sustainability programs work in this field in New York, only Fashion Institute of Technology wrote to say that they have some coursework in sustainability—though from a different approach.

h)(4) *Collaboration:* **Did this program's design benefit from consultation with other SUNY campuses? If so, what was that consultation and its result?**

We did not find another SUNY program to consult, though of course we are aware of the work in environmental sustainability done at SUNY ESF.

h)(5) *Concerns or Objections:* **If concerns and/or objections were raised by other SUNY campuses, how were they resolved?**

No concerns were raised.

2.4. Admissions

a) What are all admission requirements for students in this program? Please note those that differ from the institution's minimum admissions requirements and explain why they differ.

All students applying to the program must submit their application materials through the Graduate School. Application materials include an application form, transcripts, two letters of recommendation, a personal statement, a short essay, and a resume. International applicants must also submit results from either TOEFL (minimum score of 100) or IELTS (minimum score in Band Seven) unless they have received a college or university degree from a U.S. institution or an institution in a country whose native language is English. Admissions materials will be reviewed and decisions will be made by the Sustainable Communities Program Committee. Applications for the fall semester are due April 15 and are considered on a rolling basis until the April deadline; any applications received after April 15 are accommodated on a space available basis or are deferred until the spring semester.

Each applicant is evaluated based on his/her undergraduate GPA, letters of recommendation, personal statement, essay, and work experience. When evaluating the letters of recommendation, the admissions committee looks for evidence of academic achievement, community involvement and personal characteristics that suggests the applicant has the capacity to foster an institutional culture that advances democratic administration and governance. In the personal statement, the committee assesses the student's commitment to public and/or nonprofit administration as well as his/her ability to communicate in writing. The essay allows the admissions committee to review a non-generic piece of writing for structural and grammatical quality.

Significant work experience (5 or more years in the public or nonprofit sector) can add to an applicant's positive credentials; however, the lack of work experience does not result in a penalty. All students are required to earn a B or better in the first twelve credits towards their degree. Failure to meet this requirement may result in severance from the program.

No standard will be applied that differs from Binghamton University's minimum admissions requirement.

b) What is the process for evaluating exceptions to those requirements?

The process for evaluating exceptions will be developed by faculty members of the Program Committee, which will refine, employ, and publicize admissions criteria, policies, and procedures. They will set performance expectations for admission, maintain records, and assess the effectiveness of admissions procedures in selecting students who succeed in the program.

c) How will the institution encourage enrollment in this program by persons from groups historically underrepresented in the institution, discipline or occupation?

The enrollment of students from historically underrepresented groups will be encouraged by a recruitment program designed to produce a diverse and well-qualified applicant pool and supported by scholarship aid through the Clark Fellowship program for underrepresented students. In addition, social equity is an important dimension of sustainability. We will reach out to appropriate undergraduate majors at institutions that have large numbers of under-represented students in order to inform them about the opportunities offered by the new degree program. People from underrepresented groups are shown to be interested in and committed to sustainability; therefore we expect a strong and very diverse applicant group.

d) What is the expected student body in terms of geographic origins (i.e., same county, same Regents Region, New York State, and out-of-state); academic origins; proportions of women and minority group members; and students for whom English is a second language?

The student body for the master's program in Sustainable Communities is expected to draw nationally as this is one of the relatively few programs of its kind in the United States. Certainly we expect to enroll a high number of students from New York State and the northeast region. Since sustainability typically includes aspects of social equity as well as environmental protection and economic development, we expect to draw a high proportion of women and minority group members.

The master's programs in Sustainable Communities is likely to attract applicants from and thus to reflect the outstanding undergraduate student body at Binghamton University. Our undergraduates, with grades and SAT scores that place them in the top 5% of college applicants nationwide, come from 100 different countries as well as almost every state in the USA. At present 36% of them represent diverse cultural and ethnic backgrounds, and they are evenly split between men and women. Many of them are interested in Environmental Studies, which does not currently offer a graduate program; we expect strong applicants from this undergraduate major. While students will be recruited for the program from other colleges and universities both in and beyond New York, our own exceptional undergraduates are likely to be among the first in line for this cutting-edge program, and because they are New York State's best, we will enroll a very well qualified student body.

2.5. Academic and Other Support Services

a) **Summarize the academic advising and support services available to help students succeed in the program.**

Academic advising will by done by the faculty, as in other graduate programs on campus. Newly arriving students will participate in a wide-ranging and thorough orientation program. As part of this orientation, they will get a chance to hear from and meet faculty affiliated with this program in various departments, including members of the Program Committee. From admittance, each student will be assigned an advisor, who is a faculty member from one of the departments associated with the program. This person will guide students

through the selection of academic courses as well as the research and writing of their final exit project. A new advisor can be selected by students without prejudice after the first semester, based upon areas of interest and personal fit. The new advisor will be the student's committee chair and will take over advising duties including assisting the student in the selection of two other committee members from the University. If the student chooses to undertake a capstone project (rather than a thesis) for their final exit project, the third committee member may be from the organization for which the student is conducting his or her research.

Students who elect to pursue the MA capstone project will draw on faculty advisors from all appropriate departments to arrange a research question that engages a professional or policy project. Faculty advisors will collaborate in refining the goals of the project, helping students make contacts in the broader community, and insuring that the project leads to valuable outcomes for the student and the agency.

Other support services for graduate students are provided through the Graduate School, the Graduate Community of Scholars, the Career Development Center, and the Graduate Student Organization.

b) **Describe types, amounts and sources of student financial support anticipated. Indicate the proportion of the student body receiving each type of support, including those receiving no support.**

Graduate students at the master's level receive financial support primarily from loans. A limited number of Clark Fellowships for Underrepresented Minority Students are available for qualified students, and some master's students are employed in various capacities as assistants. We anticipate that 90% of the students enrolled in this program will receive no support except for loans.

2.6. Prior Learning Assessment

If this program will grant credit based on Prior Learning Assessment, describe the methods of evaluating the learning and the maximum number of credits allowed, **or check here [X] if not applicable**.

2.7. Program Assessment and Improvement

Describe how this program's achievement of its objectives will be assessed, in accordance with *SUNY policy*, including the date of the program's initial assessment and the length (in years) of the assessment cycle. Explain plans for assessing achievement of students' learning outcomes during the program and success after completion of the program. Append at the end of this form, a plan or curriculum map showing the courses in which the program's educational and, if appropriate, career objectives – from Item 2.3(b) of this form – will be taught and assessed. *NOTE: The University Faculty Senate's Guide for the Evaluation of Undergraduate Programs is a helpful reference.*

As part of the regular assessment cycle for all programs at Binghamton University, student learning outcomes will be assessed at regular intervals in courses selected from the curriculum by the Sustainable Communities Program Committee. Program achievements will be assessed through self-study and external review every seven years, beginning in the fifth year after the program is started. The program will assess its achievement of career objectives for students by tracking graduates' employments after completion. Placement data will be compiled and evaluated every year and will form part of the program review accomplished at 7-year intervals.

Section 3. Sample Program Schedule and Curriculum

Complete the **SUNY Graduate Program Schedule** to show how a typical student may progress through the program. Either complete the blank Schedule that appears in this section, or complete an Excel equivalent that computes all sums for you, and can be found at http://www.suny.edu/provost/academic_affairs/app/forms.cfm. Rows for terms that are not required can be deleted.

*NOTES: The **Graduate Schedule** must include all curriculum requirements and demonstrate that expectations from Part 52.2(c)(8) through (10) of the Regulations of the Commissioner of Education are met.*

Special Cases for the Sample Program Schedules:
- *For a program with multiple tracks, or with multiple schedule options (such as full-time and part-time options), use one Program Schedule for each track or schedule option. Note that licensure qualifying and non-licensure qualifying options cannot be tracks; they must be separate programs.*
- *When this form is used for a multi-award and/or multi-institution program that is not based entirely on existing programs, use the schedule to show how a sample student can complete the proposed program. **NOTE**: A different form (for program revisions) should be used for new multi-award and/or multi-institution programs that are based entirely on existing programs. SUNY policy governs the awarding of two degrees at the same level.*

    a) If the program will be offered through a nontraditional schedule (i.e., not on a semester calendar), what is the schedule and how does it impact financial aid eligibility? *NOTE: Consult with your campus financial aid administrator for information about nontraditional schedules and financial aid eligibility.*
    Not applicable; the program is offered through a traditional schedule.

    b) For each existing course that is part of the proposed graduate program, append a catalog description at the end of this document.
    See Appendix B.

    c) For each new course in the graduate program, append a syllabus at the end of this document. NOTE: Syllabi for all courses should be available upon request. Each syllabus should show that all work for credit is graduate level and of the appropriate rigor. Syllabi generally include a course description, prerequisites and corequisites, the number of lecture and/or other contact hours per week, credits allocated (consistent with SUNY policy on credit/contact hours), general course requirements, and expected student learning outcomes.
    See Appendix C.

    d) If the program requires external instruction, such as clinical or field experience, agency placement, an internship, fieldwork, or cooperative education, append a completed External Instruction form at the end of this document.

SUNY Graduate Sample Program Schedule (*OPTION: You can insert an Excel version of this schedule AFTER this line, and delete the rest of this page.*)
Program/Track Title and Award:_____

a) Indicate **academic calendar** type: [X] Semester [ ] Quarter [ ] Trimester [ ] Other (describe):
b) **Label each term in sequence**, consistent with the institution's academic calendar (e.g., Fall 1, Spring 1, Fall 2)
c) Use the table to show **how a typical student may progress through the program**; copy/expand the table as needed.
d) Complete the last row to show program totals and comprehensive, culminating elements. **Complete all columns that apply to a course.**

Term 1: Fall 1

Course Number & Title	Credits	New	Co/Prerequisites
SUST 500: Sustainable Communities I	4		
SUST 520: Research Methods	4	X	
GEOG 575: Env. Planning & Res. Mgmt.	4		
SUST 530: Sustainability Colloquium	1	X	
Term credit total:	13		

Term 2: Spring 1

Course Number & Title	Credits	New	Co/Prerequisites
SUST510: Sustainable Communities II	4	X	SUST 500
ANTH 554G: Heritage & Communities	3		
GEOG 533: Advanced Statistics I	4		SUST 520
SUST 530 (repeated, if in residence)	1	X	
Term credit total:	12		

Term 3: Fall 2

Course Number & Title	Credits	New	Co/Prerequisites
PAFF 582a: Fundamentals. of Econ. Dev.	3		
PAFF 582b: Planning Sust. Cities & Reg.	3		
GEOG 577: Analysis in Retail Geog.	4		
SUST 530 (repeated, if in residence)	1		
Term credit total:	11		

Term 4: Spring 2

Course Number & Title	Credits	New	Co/Prerequisites
ENVI 513: Environ. Impact Analysis	4		
SUST 601/602: Thesis/Capstone	4		
SUST 530 (repeated, if in residence)	1	X	
Term credit total:	9		

Term 5:

Course Number & Title	Credits	New	Co/Prerequisites
Term credit total:			

Term 6:

Course Number & Title	Credits	New	Co/Prerequisites
Term credit total:			

Term 7:

Course Number & Title	Credits	New	Co/Prerequisites
Term credit total:			

Term 8:

Course Number & Title	Credits	New	Co/Prerequisites)
Term credit total:			

Program Total:	**Total Credits:** 38 to 44	**Identify the required comprehensive, culminating element(s), such as a thesis or examination, including course number(s), if applicable:**

New: X if new course   **Prerequisite(s)**: list prerequisite(s) for the listed courses

Section 4. Faculty

a) Complete the **SUNY Faculty Table** on the next page to describe current faculty and to-be-hired (TBH) faculty.

b) **Append** at the end of this document position descriptions or announcements for each to-be-hired faculty member.

NOTE: CVs for all faculty should be available upon request. Faculty CVs should include rank and employment status, educational and employment background, professional affiliations and activities, important awards and recognition, publications (noting refereed journal articles), and brief descriptions of research and other externally funded projects. New York State's requirements for faculty qualifications are in Part 55.2(b) of the Regulations of the Commissioner of Education.

c) What is the institution's definition of "full-time" faculty?

Faculty are full time when they have full-time-commitments to a department, division, or school. Their full-time obligations in teaching, research, and service are defined by the dean and chair of the unit in which they are employed.

SUNY Faculty Table

Provide information on current and prospective faculty members (identifying those at off-campus locations) who will be expected to teach any course in the graduate program. Expand the table as needed. Use a separate Faculty Table for each institution if the program is a multi-institution program.

(a) Faculty Member Name and Title/Rank (Include and identify Program Director with an asterisk.)	(b) % of Time Dedicated to This Program	(c) Program Courses Which May Be Taught (Number and Title)	(d) Highest and Other Applicable Earned Degrees (include College or University)	(e) Discipline(s) of Highest and Other Applicable Earned Degrees	(f) Additional Qualifications: List related certifications, licenses and professional experience in field.
PART 1. Full-Time Faculty					
George Homsy	100		PhD	City and Regional Planning	
Part 2. Part-Time Faculty					
Allison Alden	25		PhD	Public Administration	
Serdar Atav	25		PhD	Political Science	
Susan Appe	50		PhD	Public Administration	
Mark Blumler	50		PhD	Geography	
David Campbell	25		PhD	Public Administration	
Lubna Chaudrhy	25		PhD	Sociocultural Studies	
Chengbin Deng	25		PhD	Geography	
Carmen Ferradas	25		PhD	Anthropology	
John Frazier	50		PhD	Geography	
Joseph Graney	50		PhD	Geology	
Siobhan Hart	25		PhD	Anthropology	
Nicole Hassoun	25		PhD	Philosophy	
Kevin Heard	25		MA	Geography	
Norah Henry	25		PhD	Geography	
Robert Holahan	50		PhD	Political Science	
Peter Kneupfer	25		PhD	Geology	
Naomi Lazarous	50		PhD	Geography	
Pamela Mischen	25		PhD	Public Administration	
Christopher Morgan-Knapp	25		PhD	Philosophy	
Jay Newbury	25		PhD	Geography	
Andreas Pape	25		PhD	Economics	
Josh Reno	25		PhD	Sociocultural Anthropology	
Nadua Rubaii	25		PhD	Public Administration	
Hiroki Sayama	25		D.Sc.	Information Science	
Tom Sinclair	25		PhD	Public Administration	
Luicus Willis	25		MA	Geography	
Part 3. Faculty To-Be-Hired (List as TBH1, TBH2, etc., and provide title/rank and expected hiring date.)					
- None -					

a) What is the resource plan for ensuring the success of the proposed program over time? Summarize the instructional facilities and equipment committed to ensure the success of the program. Please explain new and/or reallocated resources over the first five years for operations, including faculty and other personnel, the library, equipment, laboratories, and supplies. Also include resources for capital projects and other expenses.

Instructional facilities will consist of existing classroom space in the University Downtown Center and the Binghamton campus. While students are currently able to move easily between the two facilities due to regular and dependable public and university transit systems, scheduling of courses will be carefully designed and monitored to insure that the two locations do not pressend problems for students.) No new resources are anticipated; some reallocated faculty time may be involved in creating a set of offerings for the required courses, while electives are expected to consist of available existing seats in appropriate graduate-level courses in the programs represented by the faculty members listed on page 15.

b) Complete the five-year SUNY Program Expenses Table, below, consistent with the resource plan summary. Enter the anticipated <u>academic years</u> in the top row of this table. List all resources that will be engaged specifically as a result of the proposed program (e.g., a new faculty position or additional library resources). If they represent a continuing cost, new resources for a given year should be included in the subsequent year(s), with adjustments for inflation or negotiated compensation. Include explanatory notes as needed.

With 20 faculty committed to the program at ¼ time, 6 committed ½ time, and 1 committed full time, the program does not anticipate any immediate personnel needs. Additional hiring of faculty affiliated to the sustainable communities TAE can be expected to add course capacity as the new program grows in enrollment. The program does not specifically require labs or equipment, though faculty who may offer courses contributing to the program could have labs. No capital renovations are required for the program.

Initially, the program will be supported administratively by the recruitment staff at the Graduate School (where the program is housed) and by staff in the Department of Public Administration. As the program grows, it is anticipated that additional administrative resources will be needed in year three – or sooner if the program grows faster than estimated in this proposal.

SUNY Program Expenses Table
(OPTION: You can paste an Excel version of this schedule AFTER this sentence, and delete the table below.)

Program Expense Categories	Expenses (in dollars)					
	Before Start 1014-15	**Academic Year 1: 2015-16**	**Academic Year 2: 2016-17**	**Academic Year 3: 2017-18**	**Academic Year 4: 2018-19**	**Academic Year 5: 2019-20**
(a) Personnel (including faculty and all others) ¾ time staff support for enrollment expansion	0	0	0	33,000	33,000	33,000
(b) Library	0	0	0	0	0	0
(c) Equipment	0	0	0	0	0	0
(d) Laboratories	0	0	0	0	0	0

(e) Supplies	0	0	0	0	0	0
(f) Capital Expenses	0	0	0	0	0	0
(g) Other (Specify):	0	0	0	0	0	0
(h) Sum of Rows Above	**0**	**0**	**0**	**33,000**	**33,000**	**33,000**

Section 6. Library Resources

a) **Summarize the analysis of library collection resources and needs** *for this program* **by the collection librarian and program faculty. Include an assessment of existing library resources and accessibility to those resources for students enrolled in the program in all formats, including the institution's implementation of SUNY Connect, the SUNY-wide electronic library program.**

Library resources to support his program currently exist, supporting the faculty research and teaching of the multiple contributing members of the program listed above on page 15. Because of the projected additional TAE hiring related to Sustainable Communities, more new faculty are likely to be added with new research agendas, and library acquisitions will continue to be important to the program. In its current state, however, library collections and electronic resources are fully adequate to support the program.

b) **Describe the institution's response to identified collection needs and its plan for library development.**

As above, the current resources are adequate.

Section 7. External Evaluation

SUNY and SED require external evaluation of all proposed graduate degree programs. List below all SUNY-approved evaluators who conducted evaluations (adding rows as needed), and **append at the end of this document** each original, signed *External Evaluation Report*. ***NOTE:*** *To select external evaluators, a campus sends 3-5 proposed evaluators' names, titles and CVs to the assigned SUNY Program Reviewer, expresses its preferences and requests approval.*

Evaluator #1	**Evaluator #2**
Name: Dr. Graham Tobin	Name: Dr. Daniel Fiorino
Title: Director, Center for Environmental Policy	Title: Professor, School of Geosciences
Institution: University of South Florida	Institution: American University

Section 8. Institutional Response to External Evaluator Reports

Append at the end of this document a single *Institutional Response* to all *External Evaluation Reports.*

Section 9. SUNY Undergraduate Transfer

NOTE: *SUNY Undergraduate Transfer policy does not apply to graduate programs.*

Section 10. Application for Distance Education

    a) Does the program's design enable students to complete 50% or more of the course requirements through distance education? [XX] No   [ ] Yes. If yes, **append** a completed *SUNY Distance Education Format Proposal* at the end of this proposal to apply for the program to be registered for the distance education format.

    b) Does the program's design enable students to complete 100% of the course requirements through distance education? [XX] No   [ ] Yes

Section MPA-1. Need for Master Plan Amendment and/or Degree Authorization

    a) Based on SUNY Guidance on Master Plan Amendments (in the *Guide to Academic Program Planning*), please indicate if this proposal requires a Master Plan Amendment.
[X] No   [ ] Yes, a completed *Master Plan Amendment Form* is **appended** at the end of this proposal.

    b) Based on *SUNY Guidance on Degree Authorizations* (below), please indicate if this proposal requires degree authorization.

    [ ] No   [X] Yes, once the program is approved by the SUNY Provost, the campus will work with its Campus Reviewer to draft a resolution that the SUNY Chancellor will recommend to the SUNY Board of Trustees.

> *SUNY Guidance on Degree Authorization. Degree authorization is required when a proposed program will lead to a new degree (e.g., B.F.A., M.P.H.) at an existing level of study (i.e., associate, baccalaureate, first-professional, master's, and doctoral) in an existing disciplinary area at an institution, based on the New York State Taxonomy of Academic Programs. Degree authorization requires approval by the SUNY Provost, the SUNY Board of Trustees, SED and the Board of Regents.*

List of Appended Items

Appended Items: Materials required in selected items in Sections 1 through 10 and MPA-1 of this form should be appended after this page, with continued pagination. In the first column of the chart below, please number the appended items, and append them in number order.

Number	Appended Items	Reference Items
	For multi-institution programs, a letter of approval from partner institution(s)	Section 1, Item (e)
	For programs leading to professional licensure, a side-by-side chart showing how the program's components meet the requirements of specialized accreditation, Commissioner's Regulations for the profession, or other applicable external standards	Section 2.3, Item (e)
	For programs leading to licensure in selected professions for which the SED Office of Professions (OP) requires a specialized form, a completed version of that form	Section 2.3, Item (e)
	OPTIONAL: For programs leading directly to employment, letters of support from employers, if available	Section 2, Item 2.3 (h)(2)
A	*For all programs*, a plan or curriculum map showing the courses in which the program's educational and (if appropriate) career objectives will be taught and assessed	Section 2, Item 7
B	*For all programs*, a catalog description for each existing course that is part of the proposed graduate major program	Section 3, Item (b)
C	*For all programs with new courses,* syllabi for all new courses in a proposed graduate program	Section 3, Item (c)
	For programs requiring external instruction, a completed *External Instruction Form* and documentation required on that form	Section 3, Item (d)
	For programs that will depend on new faculty, position descriptions or announcements for faculty to-be-hired	Section 4, Item (b)
D	*For all programs*, original, signed External Evaluation Reports from SUNY-approved evaluators	Section 7
E	*For all programs*, a single Institutional Response to External Evaluators' Reports	Section 8
	For programs designed to enable students to complete at least 50% of the course requirements at a distance, a *Distance Education Format Proposal*	Section 10
	For programs requiring an MPA, a *Master Plan Amendment* form	Section MPA-1

Appendix A – Curriculum Map

Course Number & Title	Cr.	Obj. 1: Comp. knowledge of principles of sustainability	Obj. 2: Ability to apply methodological skills	Obj. 3: Advanced knowledge in interest area	Obj. 4: Ability to link knowledge to practice and policymaking	Obj. 5: Ability to communicate with diverse stakeholders
SUST 500: Sustainable Communities I	4	X			X	
SUST 510: Sustainable Communities II	4	X			X	
SUST 520: Research Methods	4		X			
SUST 530: Sustainability Colloquium	1	X	X	X	X	X
Environmental Policy	3 – 4	X		X		
Economic Development	3 – 4	X		X		
Social Equity	3 – 4	X		X		
Advanced Methods	3 – 4		X	X		
Elective Courses	3 – 4			X		
SUST 601: MS Thesis or SUST 602: MA Capstone	4	X	X	X	X	X

Students will be introduced to the principles of sustainability (environmental protection, economic vitality, and social equity), the interactions and tradeoffs between these principles, basic ecology and environmental science, local and organizational governance, an appreciation of the normative values of sustainability, and the ability to think critically across complex systems in the two core courses, SUST 500 and 510. Their knowledge will be deepened through required courses, one focusing on each of the three dimensions of sustainability. They will be able to practice applying this knowledge in the Sustainability Colloquium (SUST 530). Finally, they will be expected to apply that knowledge in their thesis (SUST 601) or capstone project (SUST 602), when a final assessment will be conducted. (Objective 1)

Similarly, students will learn how to design a research project and be introduced to various research methods in SUST 520. They will deepen their skills through an advanced methods course. They will practice applying what they have learned in the Sustainability Colloquium and will be expect to apply their knowledge and be assessed in their thesis or capstone project. (Objective 2)

Students will advance their knowledge in a particular area of interest in four ways. First, in conjunction with their advisor, they will choose the most appropriate environmental policy, economic development and social equity courses given their area of interest. Second, they will select an advanced methods course that provides them with the tools that they need to answer the types of questions they are most likely to ask as a part of their thesis or capstone. Third, they will choose elective courses that round out their

program of study and provide them with a marketable knowledge base/skill set. Fourth and finally, they will write a thesis or capstone paper that exhibits the depth of their knowledge in their particular area of interest. (Objective 3)

Students will begin to link knowledge to practice and policymaking in the Sustainable Communities I and II courses. They will demonstrate that they understand this link in the Sustainable Communities Colloquium and demonstrate their full competence in their thesis or capstone. (Objective 4)

Students will communicate and interact with diverse stakeholders in a professional setting by engaging in a research project of their choosing. They will first be exposed to more advanced students and researchers in the Sustainable Communities Colloquium. They will then demonstrate their competence in these areas in their thesis or capstone. (Objective 5)

Appendix B – Catalog descriptions of existing courses

Required Courses – Environmental Policy (at least one is required)

GEOG 509 Conservation of Natural Resources – Historical and contemporary examination of geographic, economic, environmental, cultural and economic factors relating to natural resource use and management. Effective conservation of biota and of resources such as minerals, soils and water; policy goals; global and local control. Conservation policy practice and theory. Prerequisites: any one of GEOG 121, 221, 232, BIOL 104, or 373, or ENVI 101 and 201, or consent of instructor.

GEOG 523 Soils and Environment – Morphological properties of soils as natural bodies; factors and processes of development; role in natural ecosystems; and systems of classification at topographical, regional and global scales. Soil fertility and its role in land use. For majors and non-majors. Prerequisite: Geog 121 or equivalent.

GEOG 542 Water Resource Management – Hydrologic, engineering, economic, ecological and institutional aspects of water planning and management. Watershed management opportunities and constraints. Governmental and private water decision-making systems and processes.

GEOG 575 Environmental Planning and Resource Management – Evaluation of factors affecting decision making and use of environmental and natural resources, including geographic, economic, cultural and political influences. Analysis of different management strategies as they affect different parts of the world. For geography and environmental studies majors.

GEOG 576 Advanced Environmental Analysis – The combined use of spatial analytical tools and applications in evaluating environmental problems. The course is divided into two parts. The first part will focus on the acquisition and processing of environmental data using Statistics, Remote Sensing and Geographic Information Systems (GIS). The second part will focus on the application of these tools in analyzing and displaying data pertaining to environmental risks, hazards, and vulnerability among population subgroups. Prerequisites: One or more environmental courses recommended. At least some previous or concurrent experience with SPSS and spatial analytical software.

PAFF 577 Environmental Policy Analysis – Effective environmental policy requires the application of a policy tool that incorporates the social and ecological particularities of a specific problem. For example, a reliance on permits that specify exact limits on waste generation may work on point-source pollution problems, but may be less effective on non-point source pollution problems. This seminar will review several key approaches to environmental policy, including the use of mandates, tax incentives, tradeable permits, and community-based management. We will explore these approaches within local, national, and international environmental policy regimes, paying particular attention to how the characteristics of the environmental or resource problem influence the effectiveness of alternative policies.

Required Courses – Social Equity (at least one is required)

ANTH 512 Political Ecology – A critical examination of the development of environmentalism in the late 20th century and the new millennium. Concerned with the politics of ecology under capitalism; also focuses on cultural representations of nature and the current environmental crisis. Discussions address current debates on scarcity, population growth, sustainability, the privatization of nature, global warming, bioreligionalism, biopower, nature/capital, ecological movements, cities and nature, and environmental planning. Readings cover issues related to both the "green" and "brown" agendas and draw from various theoretical traditions in the social and human sciences.

ANTH 554G Heritage and Communities – Heritage is a complex and contested domain that includes legislation to protect antiquities and cultural traditions, conceptions of local and national identities, political struggles, and crucial economic resources. As such, the process of defining heritage is fraught with inequalities and power relationships. In this course, we will explore the concept of heritage as it intersects with contemporary communities (conceived of in a variety of ways, including descendant, local, and diasporic). Anthropologists, and archaeologists in particular, are but one of many individuals and communities engaged in the complex process of defining heritage. Here, we will examine how the work of heritage is carried out and consider its changing role in social relations by critically engaging theory and case studies of real-world heritage empowerment (and disempowerment) in post-apartheid South Africa, the Middle East, the Northeast U.S. and among urban immigrant communities in Europe and elsewhere in the world.

GEOG 546 Environmental Health and Hazards – Introduction to issues, concepts and analytical tools associated with assessment and management of environmental health hazards. Emphasis is on the geography of health hazards that originate from anthropogenic sources in our environment. Spatial analytical techniques are used to delineate the pattern and distribution of these hazards, the disparate risks and health outcomes across population subgroups in the United States. Prerequisite: any of the following or equivalents: GEOG 503, 533, 523, 530, 576.

GEOG 553 Seminar in Ethnic Geography – This seminar explores geographic issues of race and ethnicity, the regional geographic distributions of ethnic groups and origins of those distributions, dynamics of change in ethnic geography at various scales, the sociospatial dynamics of urban ethnic enclaves, and current issues in ethnic geography. Pre-requisite: At least one course in Cultural or Urban Geography or Permission of instructor required.

GEOG 558 The African Diaspora – Examines the processes and patterns of the changing African Diaspora since the inception of the United States. In historical contexts, it examines the changing forces that modified traditional American black geographies of the South and the reshaping of American urban centers during and after the Great Migration. It also explores the geography of ghetto formation and black suburbanization after World War II. Recent black immigration and secondary migration also is contributing to new urban and suburban forms. The course explores two contemporary forces that have diversified and modified black geographic locational patterns, black immigration and the reverse migration. It also compares the U.S. case to black Canada.

Required Courses-Economic Development (at least one is required)

GEOG 577 Retail Geography – Involves applied research strategies and the use of key data sources that support retail research. Methods of analysis applicable in market selection decision making are examined. Some simple models for site selection analysis and store location analysis using multivariate statistics are introduced.

PAFF 582 Fundamentals of Economic Development – This class introduces students to theories, debates, and practical strategies regarding the economic development of regions and communities through a sustainability lens. Students gain an enhanced understanding of the complexities inherent in the notion of sustainable development and critically analyze "community" as a set of social relations, as a local economy, and as a meeting of the natural and built environments. Using case examples from around the United States, the students examine the roles and effectiveness of the methods, models and strategies used by traditional local economic development specialists as compared to officials in communities seeking to balance the dimensions of sustainability in their development efforts.

Advanced Methods Courses (at least one is required)

ECON 696H Agent-based Policy Modeling – It has been said that, where there is no choice, there is no economics. This class encompasses choice theory, modeling, and simulation. We begin with an in-depth investigation of Decision Theory, beginning with von Neumann-Morgenstern's model of expected utility and continuing through Savage to modern notions of ambiguity, case-based reasoning, and different kinds of uncertainty. We see how the central model of choice is adapted to take into account insights from psychology, in particular by learning the implications of Kahneman and Tversky's work and other results from behavioral economics. We also investigate how different models of choice imply different empirical results through simulation: in this class we manipulate a virtual agent and place him in different problems with different governing theories of choice and compare the simulated choice data. Students will be equipped to read modern literature in decision theory and behavioral economics, as well as understand the nature of simulating choice and develop their own problems and choice theories for the virtual agent.

GEOG 502 GIS and Spatial Analysis – Introduction to thematic map design and the fundamentals of Geographic Information Systems. Use of computers to implement cartographic design principles and vector GIS analytical techniques. Basics of statistical data classification and interpretation.

GEOG 505 Raster Analysis – Interpretation of aerial photography and elementary photogrammetry. Basic digital image processing and an introduction to raster operations in GIS. Practical use of GPS and GIS. For majors and non-majors.

GEOG 533 Advanced Statistical Techniques for Geographic and Spatial Analysis – Data types, quality, and generation, followed by appropriate multivariate techniques and analyses. Open to Geography graduate students only. Prerequisite: introductory course in statistics

GEOG 544 GIS and Spatial Analysis – Begins with the fundamentals of Geographic Information Systems (GIS), including data structures, sources, acquisition, manipulation and presentation. Spatial analysis techniques for both vector and raster data structures are explored within a context of practical applications. Prerequisite: GEOG 360.

GEOG 545 Advanced GIS and Spatial Statistics – Focuses on conceptual and applied methods and approaches of Geographic Information Systems (GIS). The data acquisition, portrayal, and spatial analysis functions of GIS are explored through research topics. Desktop ArcGIS is used for course assignments and a final capstone project. Prerequisite: GEOG 502. Format: Discussion, assignment, final project.

GEOG 566 Advanced Statistical Techniques for Geographic and Spatial Analysis – Advanced variance analysis, covariance analysis, future analysis, survey sampling techniques

GEOG 569 Advanced Cartography – Mapping and analyzing the statistical surface. Effect of class interval systems and interpolating schemes on choropleth and isopleth maps. Map perception. Automatic pattern recognition. Prerequisite: GEOG 261.

PAFF 513 Survey Design and Research – Development of skills necessary for the design and implementation of survey research. Prerequisite: PAFF 510.

PAFF 515 Program Evaluation – This course focuses on the basic concepts, challenges, and methods in program evaluation. The primary objectives of the course are to develop: (1) an understanding of the role of evaluation in the policy- making process; (2) an ability to critically analyze various approaches and methods; and (3) an ability to craft an evaluation for an existing public or non-profit program. Prerequisite: PAFF 510.

PAFF 516 Performance Analysis – The course The course emphasizes the importance of performance analysis in government and nonprofit organizations to maintain accountability. It introduces students to tools and techniques for measuring the performance of individuals, organization and/or jurisdictions. The class will focus on the use of performance analysis evidence for making management decisions. Prerequisite: PAFF 510.

PAFF 523 Introduction to Policy Analysis – Concepts and tools used in the craft of policy analysis, including problem definition, development and analysis of policy alternatives and requirements of reporting the results of analyses. Introduction to economic and political criteria for evaluating policy alternatives. Roles of policy analysis in democratic governance and decision making are emphasized. Prerequisites: PAFF 521 and 510.

SSIE 523 Collective Dynamics of Complex Systems – Introduces students to the study of collective dynamics demonstrated by various natural, social and artificial complex systems, i.e., systems made of a massive amount of lower-level components interacting with each other in a nonlinear way. Discusses several computational modeling frameworks, including agent-based models (particle models, ecological and evolutionary models, game-theoretic models), complex network models (small-world and scale-free networks, dynamical networks, adaptive networks), and spatial models (cellular automata, partial differential equations). Also discusses mathematical concepts and tools to analyze and understand their behavior, e.g., mean-field approximation, linear stability analysis, scaling, renormalization, bifurcation, chaos, pattern formation, and phase transition. Python will be used as a primary computer programming language for modeling and simulation. Prior computer programming experience is helpful, but not strictly required. Prerequisites:Graduate standing and basic knowledge of calculus, linear algebra and probability theory, or consent of instructor.

Electives (at least two required from this list or from required course lists)

ANTH 380S/5XX- "Globalisation" is a term typically reserved for transnational flows of ideas, people and things that are not, and have never been, truly global. In actuality, humankind did not succeed in influencing the entire earth until the 20th century, when industrial carbon emissions introduced an artificial planetary climate. No environmental topic has generated comparable controversy and concern as has global climate change in recent years. In this course, we will focus on the various debates that have developed around this phenomenon, and the contributions that social scientists can make to them. We will read about culturally variable ways of perceiving weather and glaciation, the political economy and culture of fossil fuels, and the possibilities for transitioning toward "clean energy societies." We will also critically assess the impacts of various policies to reduce, market and measure emissions, debates over climate science, as well as the humanitarian eco-crises for which changes in global climate are held responsible.

ENVI 513 Environmental Impact Analysis – Evaluation and application of methods and procedures in environmental impact analysis. Consideration of requirements locally, nationally and internationally. Students write environmental impact statements (EIS) on local projects and critique an EIS written by a federal agency.

GEOG 500 Geographic Theory – Theoretical themes of modern geography are presented as the foundations for contemporary research in human and physical geography. Students focus on the development of a simple theory and it relevance to a specific research problem. Each student writes a research proposal and presents it to the group

GEOG 508 Urban Planning I – This course provides an introduction to the history and theories of urban planning. The course covers four themes: (1) the historical rise of cities, suburbs and planning; (2) ethical and theoretical questions in planning; (3) case studies of planning; (4) the current transformation American cities. Seminar type discussion of assigned readings; short essays in response to assigned readings: two exams. Prerequisites: One of the following: GEOG 232,233, 234 or 235.

GEOG 535 Urban Planning II – Planning commercial development, industrial location planning, planning housing development, public and private sectors, planning reorganization of public services, transportation, urban renewal, and zoning.

GEOG 581 Urban Structure and Process – This seminar explores geographic issues of race and ethnicity, the regional geographic distributions of ethnic groups and origins of those distributions, dynamics of change in ethnic geography at various scales, the sociospatial dynamics of urban ethnic enclaves, and current issues in ethnic geography. Prerequisite: At least one course in Cultural or Urban Geography, or permission of instructor.

PAFF 514 Proposal Preparation and Grant Management – Development of skills necessary for the preparation and submission of funding proposals to government agencies and private foundations. Techniques for grant implementation, operation and closing

PAFF 520 21st Century Governance – Governance focuses on leading and managing organizations in public and nonprofit settings. One key aspect of effective public service today involves understanding and successfully navigating across organizational boundaries—essentially functioning within multi-organizational and multi-sectoral networks. In an environment of increased globalization, this requires public administrators possess multiple areas of cultural competency. Skill development will focus on negotiations, project and contract management and oversight. No prerequisites are required.

PAFF 536 Managing Networks – In public administration, an increasing number of policy objectives are being accomplished through networks of people and/or organizations. This course focuses on both intra- and inter-organizational networks of people, the structure and function of networks, and skills needed for network management. Meets the "Managing People in Organizations" requirement. 3 credit

PAFF 542 / NURS 633 Advanced Health Systems and Public Policy – The American healthcare system is examined and compared to other systems of healthcare delivery. Strengths and weaknesses of international systems are explored. Structural indices and organizational analyses of healthcare systems are examined in relation to change. The role of public health politics and policy development, public policy risk assessment, interest-group behavior and the politics of health reform in rural, urban and suburban areas are included. The influence of public policy models applied in community settings is analyzed for their effects on healthcare system development.

PAFF 548D/NURS540 Health Policy Formulation – The goal of this course is to analyze current major U.S. health policy issues and the critical processes and forces that shape them. The health policy issues addressed include rural health, Medicare, Medicaid, the uninsured, public health, the impact of welfare policy on health care, managed-care development and regulation, state and federal healthcare reform, and others.Discussions will focus on the politics of health policy in terms of legislative and executive processes at the state and federal level; key forces involved including economic, social, ethical and political factors; and central players of importance, including special-interest groups, lobbyists, the press, elected officials, legislative staff and public agencies. Specific rural health issues will be suggested by students and discussions will be led by students.

PAFF 551 Introduction to Management and Leadership in Nonprofit Organizations – Overview of management in not-for-profit organizations, with an emphasis on the role of leadership and styles of leadership. Topics include techniques for board development, strategic planning, marketing and other aspects of not-for-profit management.

PAFF 552 Issues in Nonprofit Administration – Addresses the changing role/environment of not-for-profit organizations. Issues may include competition for financial and human resources, advancements in technology, increased mobility in a global environment, and the changing nature of public-private partnerships. 3 credits

PAFF 564 Local Development in the Andes – The course provides an opportunity for students of diverse backgrounds and interests to learn about the dynamics of sustainable development with a focus on the Andean Region in Latin America. It situates local sustainable-development practice within its interconnection between environmental issues, economic viability, social equity as well as cultural identity. The course is designed to help students develop knowledge and skills that enable them to reflect on local development and their own roles in international service. Service-learning is put into action when U.S. students work together with Peruvian community-based nonprofit organizations.

PAFF 580 Introduction to Local Government Management – This course provides an overview of structure and function of local government. Discussion topics include leadership skills, board administration, performance management, strategy development, and public participation.

PAFF 582 Sustainable Cities and Regions – Municipalities in the United States have enormous power to impact the local and regional environment. Through academic readings and policy documents, we will survey the history, theory, and practice of sustainable (and unsustainable) land use planning and how it has shaped our urban, suburban, and rural areas. We will learn about and challenge the various contemporary approaches to sustainable planning, such as Smart Growth, New Urbanism, and Transit Oriented Development. Course work will culminate in the drafting of a land use plan that seeks to resolve sustainability issues facing a typical community.

SW 515 Social Welfare Policy and Programs – The history, philosophy and structure of social welfare and social work within the American social system are presented in a model that students may use to understand social welfare issues, programs and services and to enhance social work practice with clients. The role of social policy in helping or deterring people in the maintenance or attainment of optimal health and well-being, and the effect of policy on social work practice, are explored. Students analyze current social policy within the context of historical and contemporary factors that shape policy. Content includes the political and organizational processes used to influence policy, the process of policy formulation and the frameworks for analyzing policies in light of principles of social and economic justice.

Appendix C – Syllabi for new classes

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SUST 500 – Sustainable Communities I: Theory and Practice
(Currently taught, but listed here for convenience)

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In this seminar, we will critically read and analyze literature that frames potential theories of sustainability and its practice across the environmental, economic, and social equity dimensions. We will examine how local governments and local organizations interact with each other and how they relate to others actors at different geographic and governmental scales. This is not an environmental policy course, but rather an exploration of the way that the environment, economy, and society comprise a complex system that is rife with power, profit, and politics as well as science. We will examine theoretical frameworks and practical policy through a specific set of issues in a variety of places. Although many of these issues seem national or global, we will continuously try to concentrate on local impacts and actions from the perspective of local governments and non-profit organizations.

This course will be team taught by faculty members from the departments of Public Administration, Geography, and Environmental Studies. Guidance with regards to learning objectives and skill development goals will be provided to teaching faculty by the Sustainable Communities Program Committee.

Credits: 4

Learning objectives and topic areas

By examining a diversity of issues, we will work towards the following learning objectives. This course is designed to push students to:

- Engage with the potential theoretical principles of sustainability and related fields
- Comprehend the basic scientific, social, and economic principles in the topic areas
- Apply a sustainability framework to a broad range of policy decisions
- Understand sustainability contexts in other nations
- Write and present about these issues in a clear, concise, and compelling fashion

SUST 510 – Sustainable Communities II: Science and Practice

Building on SUST 500, students will continue to critically examine sustainability issues, particularly at the local level, though a series of cases. The case studies will push students to explore how coupled human-environmental systems can endure in the face of global change, ecosystem degradation, and resource limitations. This course will focus on key knowledge areas of sustainability theory and practice including: scale, population, climate, urbanization, ecosystems, energy, land use, natural resources, hazards, economics, management, ethics, and culture. Through spatial analysis, measures of sustainable development will also be investigated. Rigorous analysis will be translated into policy memos, white papers, and presentations that explain options and build a case for policy action.

This course will be team taught by faculty members from the departments of Public Administration, Geography, and Environmental Studies. Guidance with regards to learning objectives and skill development goals will be provided to teaching faculty by the Sustainable Communities Program Committee.

Credits: 4

Learning objectives and topic areas

- Link theories of sustainability to the complex science while investigating its environmental, economic, and social dimensions
- Apply the complexity of sustainability science to real world cases
- Measure the local and spatial dimensions of sustainability
- Craft compelling arguments for decision making based upon evidence
- Write and present about these issues in a clear, concise, and compelling fashion

SUST 530 – Sustainability Colloquium

This is a student-run, faculty-guided class that is repeated every semester and is required for every enrolled student who is in attendance. In this class, students come together weekly to work on academic and professional development. Faculty, including guest speakers invited by students, will facilitate discussions on particular topics with a focus on helping students link sustainability theory to practice. The colloquium will regularly incorporate sessions on collaboration, conflict management, and public participation, which are important professional skills in this discipline.

Credits: 1 (may be repeated for credit)

Learning objectives and topic areas

- Allow students space to engage self-directed exploration of various topics
- Comprehend the basic scientific, social, and economic principles in the topic areas
- Write and present about these issues in a clear, concise, and compelling fashion