

**Fostering Curriculum Development and Cross-Campus Collaboration in
Sustainability at the University of Florida:
A Report with Conclusions and Recommendations**

**Submitted to
University of Florida Office of the Provost
the Faculty Sustainability Committee
And the
Office of Sustainability**

September 26, 2006

**Prepared by
Conservation Clinic
Center for Governmental Responsibility
University of Florida Levin College of Law
Brenda L. Appledorn, J.D. Candidate
Thomas T. Ankersen, Director**

INTRODUCTION

In June of 2006 The Office of the Provost contacted the University of Florida Conservation Clinic about the possibility of assisting her office in understanding the status of sustainability pedagogy at the University of Florida in order to “examine the feasibility of developing an interdisciplinary curricular emphasis (e.g. /certificate/ concentration/track/minor/other) in ‘sustainability studies’ that adds value to the graduate and/or undergraduate curriculum at the University of Florida and which serves to foster interdisciplinary cross-campus faculty collaboration on sustainability.” The provost provided funding for a research assistant who worked throughout the summer and early fall to produce this report, working closely with the University’s Office of Sustainability. Both the methodology and the selection of courses pursuant to that methodology contain a degree of subjectivity. The report is intended to provide a basis upon which both can be discussed and refined among interested faculty.

SUMMARY CONCLUSIONS & RECOMMENDATIONS

Although there are significant curricular gaps, the University of Florida already has a rich curriculum in courses that is based in sustainability theory or relates to sustainability principles, and that rivals the curricula at peer and other institutions which have formalized their sustainability curricula into interdisciplinary programs, including graduate and undergraduate degree programs, certificates and minors. The University should consider creating a programmatic emphasis in sustainability at both the undergraduate and graduate level, and provide additional strategic resources to leverage its current curricula. Given the apparent success of academic sustainability programs at other institutions (most are relatively new), there is no reason to believe a market for this curricular emphasis would not exist at UF. Detailed conclusions and recommendations are provided below.

METHODOLOGY

This report documents the status of the “sustainability” curriculum at the University of Florida, including programmatic efforts within and between academic and research units on campus, and reviews programmatic initiatives on other campuses that reflect formalized interdisciplinary curricular collaboration. To undertake this effort the Clinic first met with the Office of Sustainability to determine the extent to which this effort had already taken place, and to add value to any such efforts. We learned that many courses had been compiled and listed on the Office website,¹ but no systematic effort had yet been made to analyze the extent to which these courses embodied sustainability. Accordingly, the decision was made to review these courses and their syllabi, as well as any new ones found in the University catalog, based upon the extent to which they address the “Guiding Principles of the University of Florida’s Office of Sustainability.”² Those Sustainability Principles listed under the following categories: Teaching & Research; Service, Outreach & Extension; Energy Conservation & Climate Change; Land & Resource Management; Agriculture; Built Environment; Waste Reduction; Procurement; Investment; Transportation; Health; Equity; Cultural Climate; Stewardship.

Since sustainability is a broad term and many courses at UF address one or more of the principles of sustainability, we decided to try to differentiate courses based on the extent to which courses addresses the concept of sustainability generally and incorporate the principles into their syllabi. We created three tiers, including:

- 1) Those which are **based in** sustainability theory and practice, either in an interdisciplinary manner or in the context of a single discipline
- 2) Those which generally **relate to** the principles of sustainability, and;
- 3) Those which **implicitly address** one or more of the principles of sustainability.

We then reviewed the UF on line course catalog for courses which appeared, by virtue of their title; appear to address some aspect of the sustainability principles. Where available, syllabi were scrutinized to place the course within the tiered stratification. Based on the tiered stratification, we created a spreadsheet which lists, by college and department,³ the course, course number, professor and a link to course or instructor’s website, which usually includes the syllabus. Unless we were advised of them in an ad hoc fashion, we did not review courses that are not included in the most recent online undergraduate and graduate catalog.⁴ The spreadsheet that provides the results of this review is attached as Appendix 1.

We used the same approach to identify in-unit or inter-unit academic programs on campus, and in-unit or inter-unit research and outreach centers and institutes on campus, but conflated and limited ourselves to Tiers I and II. In this case, we distinguish between certificates and programs that offer courses, and programs, centers and institutes that

¹ <http://sustainability.ufl.edu/courses/>

² <http://www.sustainable.ufl.edu/mission.html>

³ There are 16 Colleges at the University of Florida, <http://www.ufl.edu/colleges/>

⁴ <http://www.registrar.ufl.edu/catalog/programs/courses/index.html>

focus research, extension and outreach. The spreadsheets that provide the results of this review are attached as Appendix 2 and Appendix 3.

Finally, we note some interesting ad hoc interdisciplinary initiatives and collaborations taking place on campus.

In addition to assessing the degree to which the UF curriculum addresses sustainability, we identified and characterized efforts of other colleges and universities to create formalized, programmatic inter-unit and interdisciplinary approaches to their sustainability curriculum. For these, we list the school, the nature of the program (e.g. /certificate/ concentration/track/minor/other), contact information and website if available and comments, if we have them. We divided this between degrees and certificates, and centers and institutes, though in many cases the distinction is more one of nomenclature than substance. The spreadsheet that provides the results of this review is attached as Appendix 4. For those institutions who responded to our inquiries, Appendix 5 provides additional information concerning their programs. Promotional materials concerning these programs, if available are attached as Appendix 6.

CONCLUSIONS AND RECOMMENDATIONS

Current Campus Sustainability Curriculum

Any campus wide assessment of sustainability curricular content is fraught with imprecision and necessarily subjective. Nonetheless a review such as this can help to determine the depth and breadth of the current curriculum at the University of Florida, and the opportunity for next steps, if any.

- The University of Florida has a relatively diverse curriculum in courses that are based in the UF sustainability principles. For the most part these courses lie in disciplines where the discourse surrounding sustainability is most evident.
 - We identified at least 17 courses in 5 colleges that directly address Tier I sustainability, either through a comprehensive treatment of the principles of sustainability, or because sustainability is the guiding principle of the course.
 - 8 Tier I courses were found in the College of Design Construction and Planning
 - 4 Tier I courses were located in the College of Agriculture and Life Sciences
 - 3 Tier I courses were located in the College of Liberal Arts & Sciences.
 - 1 Tier I course was found in both the College of Engineering and the College of Law.
 - We identified at least 39 courses in 8 colleges that address Tier II sustainability.
 - There are a large number of other courses, which by virtue of their syllabi implicitly relate to one or more of the principles of sustainability.

- We identified 53 of these in almost every college on campus. (In truth, there are probably many more courses and a finer grain analysis would be required to differentiate course content).
- At the same time, there are a number of colleges that appear to have few or no courses that address sustainability, including some colleges that would be considered especially important to insuring that sustainability offerings on campus reflect comprehensive interdisciplinarity.
 - The College of Business Administration does not appear to have any courses based in Tier I sustainability and only two that relate to Tier II sustainability. This is in contrast to some universities, such as the University of Michigan, where sustainability is a significant curriculum component of the business school, including it's participation in an interdisciplinary joint degree program with its college of natural resources.
 - The College of Education does not appear to have any courses that address Tier I or Tier II sustainability. Integrating principles of sustainability into the curriculum of those who could be teaching children about these principles would seem to be an important objective.
 - In the remaining colleges we did not find any courses that address Tier I or Tier II sustainability. While these colleges may not have departments and courses that are central to the academic discourse surrounding sustainability, each would seem to have an obligation to consider how sustainability fits within the framework of their discipline, and to consider whether to integrate sustainability into disciplinary practices.

Academic Programs within and Between Disciplines that Address Sustainability

- We identified 10 academic programs on campus that address sustainability. We use academic programs to mean course groupings that lead to a programmatic emphasis based in or related to sustainability (Tier I or II). Some of these require or encourage interdisciplinary content. Foremost among these in terms of sustainability content are:
 - The graduate certificate in sustainable architecture within the College of Architecture
 - The “sustainability subject area” within the graduate School of Natural Resources and the Environment Interdisciplinary Ecology Program
 - The Environmental Studies Minor for students in the College of Engineering
 - The Environmental and Land Use Law Certificate Program with the College of Law
 - The Tropical Conservation and Development Program in the Center for Latin American Studies

Campus Centers, Institutes and Outreach Programs that Address Sustainability

We identified 23 centers, institutes and outreach programs that are based in or relate to sustainability.

Ad Hoc Campus Sustainability Initiatives

- There are some interesting ad hoc interdisciplinary efforts that are explicitly designed to foster sustainability research and extension on campus
 - One example is a loose affiliation of faculty self-named the “roadies,” whose website states: “[T]he UF Roadies group began meeting in November 2001. The impetus for the formation of the group occurred when we realized that a number of faculty and students on campus shared interests in the impacts of infrastructure on the sustainability and resilience of linked social and ecological systems.”
<http://www.clas.ufl.edu/lueci/roadies/roadies.htm>
 - Another is the developing interest of IFAS extension faculty and administration in bringing UF resources to bear on communities seeking assistance with the development of “smart growth” policies. At least 3 meetings have taken place among this group and there is considerable interest among extension faculty and the local governments where they work. Programmatic proposals are being developed to support this initiative

Formal Sustainability Curriculum Efforts and Centers and Institutes at Peer and Other Institutions

- We identified at least 15 colleges or universities that have developed or are developing formal curricular groupings related to sustainability studies.
 - Arizona State University has the most comprehensive approach, with degrees at all levels offered through its “School of Sustainability.”
 - Columbia University offers a PhD in “Sustainable Development.”
 - The University of Michigan offers a dual degree program (MBA/MS) in “Global Sustainable Enterprise.”
 - 3 colleges or universities offer master’s degrees in sustainability.
 - The University of Minnesota offers a Sustainability Studies minor.
 - The remaining 8 colleges or universities offer or intend to offer interdisciplinary certificates in sustainability.

The Market for a Programmatic Emphasis in Sustainability Studies at UF

While no UF market survey of faculty or students was conducted to determine the interest in a university-wide sustainability studies program, an analysis of the programs and curriculum at peer and other institutions indicates that such a program would be well-received in the UF community. The statistics for both student enrollment and faculty involvement in the sustainability programs at other institutions have been collated and attached as Appendix 4. Further, after cursory review, the existing curriculum at UF, as

identified in Appendix 1, is comparable in core courses to those in the University of Michigan's MBA/MS program.

In addition to researching and collating data from other institutions, a brief, general survey was drafted at the request of the Office of Sustainability, intended for distribution among the departments and school within the University.

Administrative Process for Creation of a Programmatic Emphasis in Sustainability

The University has different requirements for developing new programs at both the undergraduate and graduate levels.

Undergraduate:

Creation of a new undergraduate certificate program requires a minimum of 12 credit hours and:

1. Identification of the department, program, or center, by adapting the field under the UF Logo.
2. Introduction of the field the Certificate will cover and provide a rationale or justification for establishing it.
3. Production of a curricular list with prefix, number, title, and number of credits, indicating those that are required from those that are not (i.e. electives left unmarked).
4. Indication of where the certificate is to be housed and who is to be the advisor.

Creation of new minors requires a minimum of 15 credit hours and completion of steps one through four above.

Upon completion of the above requirements, the documents must be submitted to the appropriate College's Curriculum Committee for approval (i.e. the College of Liberal Arts and Sciences Curriculum Committee or CCC). Once the documents are approved by the College, they are forwarded to the University Curriculum Committee for approval and inclusion in the undergraduate catalog.

Graduate:

Creation of a new graduate concentration or interdisciplinary concentration requires approval from all associated department chairs and college deans before submission to the Graduate Council. No Board of Trustees approval is required. The proposal to the associated deans and department chairs must include:

1. Description of the concentration under consideration including its goals and objectives, degree level, emphasis, and number of credit hours required (total and number required for the major).
2. The Rationale for offering a new concentration and inclusion on transcripts; the ways in which the program will enhance the quality of the existing major; the ways in which the concentration relates to the graduate programs at peer institutions.

3. Information regarding the expected number of students to be enrolled in the concentration in its first three years.
4. The effective date to begin admitting students.

Upon approval by the Graduate Council, the documents are forwarded to Graduate Curriculum Committee for final approval and inclusion in the graduate catalog.

Creation of a new graduate certificate by either the College or departments within the Graduate School does not require Graduate Council approval unless the certificate will be signed by the Dean of the Graduate School. If Graduate Council approval is required, the same process outlined above should be used.

Detailed information regarding the creation of a Joint Professional / Graduate Degree program is available at: <http://gradschool.rgp.ufl.edu/pdf-files/new-program-development.pdf>.

Current Graduate & Undergraduate Interdisciplinary Certificates and Concentrations

There are currently 11 graduate interdisciplinary certificates or concentrations offered at UF: African Studies, Agroforestry, Ecological Engineering, Geographic Information Sciences, Gerontological Studies, Health Physics and Medical Physics, Hydrological Sciences, Latin American Studies, Quantitative Finance, Tropical Agriculture, and Wetlands. More information on these certificates is provided in Appendix 6, attached.

There are 14 existing undergraduate interdisciplinary certificate programs at UF: Asian American Studies, Ceramics, Dance in Healing, Environmental Studies, European Union Studies, Human Services and Aging, International Relations, International Studies, Latin American Studies, Public Affairs, Retailing Leadership, Russian and East European Area Studies, and Translation Studies. More information on these certificates is provided in Appendix 6, attached.

RECOMMENDATIONS

- UF, through the sustainability committee, should consider the possibility of establishing a formal programmatic emphasis in sustainability studies that is explicitly interdisciplinary.
 - Any such program should require at least one foundation courses in sustainability theory, and one foundation course in sustainability applications.
 - Consideration should be given to whether existing likely core courses are robust to an interdisciplinary student body, that is; whether the course material is too specialized for students outside the Department or College where the course is offered.

- In addition to foundation courses a certificate program should consider some sort of “capstone” experience; this could be a seminar, internship, independent study, etc.
- Regardless of whether a formal campus-wide interdisciplinary program is developed, greater linkages between and among existing programmatic emphases in Colleges that traditionally address sustainability systems such as SNRE and DCP, professional schools (Business, Law, Medicine) and other colleges, including extension and outreach programs should be fostered.
 - One example of this is the recently developed “Program for Law and Policy in the Americas” which links 4 academic and research centers through a shared staff director, an academic enrichment seminar and a major conference. (The Center for Latin American Studies, The Center for International Business Education and Research, The Center for Governmental Responsibility and the International Center.)
- UF should consider providing faculty support resources to integrate sustainability into the existing curriculum.
 - To accomplish this consideration could be given to offering a small grants initiative similar to the “internationalizing the curriculum” grants that have been awarded. (Prior to this, the internationalizing the curriculum program should be reviewed to determine its intended effect on curricular reform).
 - Assuming there are willing faculty, priority support should be provided to colleges that currently provide no sustainability content and hence represent significant gaps in achieving interdisciplinarity, especially in subject matter areas regarded as crucial to achieving sustainability goals.
 - Another program that might be reviewed to determine if it merits replication is the Program of mini-grants offered to faculty by SNRE.
- Sustainability principles should be built into the in service training for extension and outreach faculty with participation from academic faculty engaged in sustainability-related research.
- Further in-depth review of the sustainability programs at peer institutions should be undertaken by the sustainability committee.
 - This could be accomplished by visits to these institutions, or by inviting administrators and/or faculty from these Programs to UF to make substantive presentations and discuss their program experience.
- The University and its surrounding community of influence should continue to be developed as a working model of sustainability and efforts should be made to encourage faculty to use the university as a laboratory for their courses.
 - In this regard, efforts should be made to develop and support courses or course components that emphasize sustainability skills such as studios,

labs, clinics and so forth in order to provide opportunities for interdisciplinary collaboration in skills training.

- Consideration should be given to surveying a statistically valid sample of incoming freshman concerning their knowledge of sustainability and its principles.
 - This sort of survey is required of faculty who receive internationalizing the curriculum grants in order to assess student knowledge of basic international facts. A second survey is completed after the course has been taught.

Appendix 1 - UF Sustainability Curriculum

Courses Based in Sustainability								
College	Dept.	Course		Academic / Theory	Applied / Outreach	Professor	Contact	
Ag and Life Sciences	Agronomy	AGR 4268C	Sustainable Ag Systems analysis	X		Johannes Scholberg	http://agronomy.ifas.ufl.edu/Scholberg.html	
	Forest Resources and Conservation	FOR 4664	Sustainable Ecotourism Development	X		Taylor Stein	http://www.sfrc.ufl.edu/sstein.html	
	Soil and Water Science	SOS 5245	Water Resource Sustainability	X		James Jawitz	http://www.hydrology.ufl.edu/syllabi/sos5245.pdf	
	Wildlife Ecology and Conservation	WIS 6943C	Resilience and Sustainability	X		Graeme Cumming	http://www.wec.ufl.edu/faculty/cummingg/RS/RSsyllabus.htm	
Design, Construction and Planning	Building Construction	BCN 1582	International Sustainable Construction	X		Charles Kibert	http://web.dcp.ufl.edu/ckibert/BCN1582/index.html	
	Building Construction	BCN 4905	Issues in Sustainability	X		Charles Kibert	http://web.dcp.ufl.edu/ckibert/BCN4905/DCP4905Index.htm	
	Building Construction	BCN 6585	Sustainable Construction	X		Charles Kibert	http://web.dcp.ufl.edu/ckibert/BCN6585/index-bcn6585.htm	
	Building Construction	BCN 6586	Construction Ecology and Metabolism	X		Charles Kibert	http://web.dcp.ufl.edu/ckibert/BCN6586/index.htm	

	Building Construction	ICM 6680	Principles of Sustainable Construction	X			Charles Kibert	ckibert@ufl.edu
	Architecture	ARC 6393	Detailing Connections for Sustainable Architecture	X				
	Architecture	ARC 6934	European Approach to Sustainable Design	X				
	Architecture	ARC 6935	Seminar in Sustainable Design	X				
Engineering	Environmental Engineering Sciences	ENV 4612	Green Engineering Design and Sustainability	X			Angela Lindner	http://www.ees.ufl.edu/homepp/lindner/courses/4612.htm
Liberal Arts and Sciences	Family, Youth and Community Sciences	FYC 6302	Sustainable Community Development	X			??	??
Liberal Arts and Sciences	Interdisciplinary Studies	IDS 4930	Facets of Sustainability	X	X		Multiple seminars	http://sustainability.ufl.edu/happenings/seminar_series/index.html
Law	Law	LAW 6946	Sustainable Development Seminar	X				
Liberal Arts and Sciences	Honors	HIS 3931	Environmental Crisis and Sustainability	X			Charles Montgomery	
Courses Related to Sustainability								
Ag and Life Sciences	Ag	ALS 3133	Ag and Environmental Quality	X			??	??
	Ag	ALS 5106	Food and the Environment	X			??	??

	Ag	ALS 5932	Scientific Procedures in Conservation and Development Issues	X				
	Agronomy	AGR 3001	Ag, Food and Society	X			Lori Snyder	http://lusnyder.ifas.ufl.edu/agr3001/
	Agronomy	AGR 4065	Effects of Management Practices on Pests, Pathogens, and Beneficial in Soil Ecosystems	X	X		??	??
	Agronomy	AGR 4092	Improved Resource Management for Profitable and Environmentally Sound Integrated Cropping Systems	X			??	??
	Agronomy	AGR 6422C	Environmental Crop Nutrition	X			Johannes Scholberg	http://agronomy.ifas.ufl.edu/Scholberg.html
	Food and Resource Economics	AEB 4274	Natural Resource and Environmental Policy	X			Roy Carriker	http://www.fred.ifas.ufl.edu/programs/docs/syllabi/4274carriker.pdf
	Food and Resource Economics	AEB 4931	Environmental and Natural Resource Economics	X			??	??
	Horticultural Sciences	HOS 3281C	Organic and Sustainable Crop production	X			??	??
	Horticultural Sciences	HOS 4281C	Advanced Organic and Sustainable Crop Prod.	X				

	Wildlife Ecology and Conservation	WIS 2552	Biodiversity Conservation: Global Perspectives	X			??	??
	Forest Resources and Conservation	FOR 2662	Forests for the Future	X			Taylor Stein	http://www.sfrc.ufl.edu/stein.html
	Forest and Resource Conservation	FOR 6170	Tropical Forestry	X			Dan Zarin	http://www.sfrc.ufl.edu/media/FOR6170.pdf
	Forest and Resource Conservation	FOR 6172C	Tropical Forestry Field Course			X	??	??
	Forest and Resource Conservation	FOR 6665	Landscape Planning for Ecotourism	X			Taylor Stein	http://www.sfrc.ufl.edu/stein.html
	Soil and Water Sciences	SOS 6932	Soil Ecosystem Services	X			N.B. Comerford	http://soils.ifas.ufl.edu/academics/syllabus/SOS6932.pdf
Design, Construction and Planning	Building Construction	BCN 4583	Natural Hazards; Designing, Planning and Building	X			??	??
	Building Construction	BCN 5584	Natural Hazards in Built Environment	X			??	??
	Building Construction	BCN 6905	Green Building Delivery Systems	X			Charles Kibert	http://web.dcp.ufl.edu/ckibert/BCN6905/BCN6905Index.htm
	Building Construction	BCN 6586	Construction Ecology and Metabolism	X				

	Building Construction	ICM 6905	Green Building Delivery Systems	X			Charles Kibert	http://web.dcp.ufl.edu/ckibert/BCN6905/BCN6905Index.htm
	Landscape Architecture	LAA 6656C	Advanced Landscape Architectural Design			X		http://www.dcp.ufl.edu/404.aspx?aspxerrorpath=/landscape/classes/6656.aspx
	Interior Design	IND 5428	Material for Interior Design	X			??	??
	Architecture	ARC 3620	Environmental Tech. 1	X			Gary Siebein	http://sustainability.ufl.edu/mailtogsiebein@siebeinacoustic.com
	Architecture	ARC 4620	Environmental Tech. 2	X			Gary Siebein	http://sustainability.ufl.edu/mailtogsiebein@siebeinacoustic.com
	Architecture	ARC 6391	Architecture, Energy and Ecology	X				
	Landscape Architecture	LAA 4315	Natural Hazards - Design, Planning and Building	X		X		http://www.dcp.ufl.edu/landscape/classes/4315.aspx
Engineering	Environmental Engineering Sciences	EES 4050	Environmental Planning and Design	X			Mark Brown	
	Environmental Engineering Sciences	EES 6051	Advanced Environmental Planning and Design	X			Mark Brown	http://www.ees.ufl.edu/homepp/brown/envplan.asp
	Environmental Engineering Sciences	EES 5072	Pollution Control and Prevention	X			Paul Chadik	http://www.ees.ufl.edu/homepp/chadik/

	Environmental Engineering Sciences	EES 4316	Industrial Ecology	X			Joseph Delfino	http://www.ees.ufl.edu/directory/faculty/template.asp?KeyName=Delfino
	Environmental Engineering Sciences	ENV 6932	The Global Environment: Polices and Institutions	X			Warren Viesman	http://www.ees.ufl.edu/directory/faculty/template.asp?KeyName=Viesman
Liberal Arts and Sciences	Latin American Studies	LAS 6290	Tropical Conservation and Development	X			??	??
Public Health and Health Professions	Public Health	PHC 6543	Community Practice of Behavioral Health Risk Prevention	X			??	??
Law	Law	LAW 6930	Conservation Clinic			X	Tom Ankersen	http://www.law.ufl.edu/conservation/
	Law	LAW 6472	Natural Resource Law	X			Christine Klein	http://www.law.ufl.edu/faculty/klein/courses.shtml
	Law	LAW 6946	Environmental Justice Seminar	X			Joan Flocks	http://www.law.ufl.edu/cgr/courses.shtml
Liberal Arts & Sciences	Honors	IDH 3931	Society at Risk: Environment, Vulnerability and Culture	X			Kenneth Campbell	
Business Administration	Finance, Insurance & Real Estate	REE 6948	Capstone Seminar and Applied Project	X			Wayne Archer and David Ling	http://www.cba.ufl.edu/fire/docs/syllabi/REE6948_ArcherLing.pdf
	Finance, Insurance & Real Estate	FIN 6930	Introduction to Social Entrepreneurship	X			Arnold Heggested	

Courses that Implicitly Address Sustainability									
Ag and Life Sciences		Agronomy	PLS 2002	Pests, Pesticides and People	X				
		Agronomy	AGR 5230	Grassland Agroecosystems	X				
		Agronomy	AGR 6932	Ag Environment and Food Security	X		Johannes Scholberg	http://agronomy.ifas.ufl.edu/Scholberg.html	
		Ag	ALS 5932	Environment and Reason	X				
		Food and Resource Economics	AEB 2450	Valuing Environmental Protection in FL	X				
		Food and Resource Economics	AEB 4123	Ag and Natural Resource Law	X				
		Food and Resource Economics	AEB 4126	Ag and Natural resource Ethics	X		Jeff Burkhardt	http://www.fred.ifas.ufl.edu/programs/docs/syllabi/4126burkhardt.pdf	
		Forest and Resource Conservation	FOR 6943	Topics in Forest Resources and Conservation	X				
		Forest and Resource Conservation	FOR 5630	NonTimber Forest Products		X	DL Rockwood		
		Wildlife Ecology and Conservation	WIS 2040	Wildlife Issues in a Changing World	X				

	Family, Youth and Community Sciences	FYC 3401	Introduction to Social and Economic Perspectives on Community	X				
	Soil and Water Science	SOS 5234	Environmental Soil, Water and Land Use	X				
	Soil and Water Science	SOS 4233	Soil and Water Conservation	X			Dr. Rebecca Darnell	
Architecture	Architecture	ARC 6391	Architecture, Energy and Ecology	X				
Liberal Arts and Sciences	Biological Sciences	BSC 2008	Biological Sciences, Evolution, Ecology and Behavior	X				
	Biological Sciences	BSC 2011	Integrated Principles of Biology 2	X				
	Biological Sciences	BSC 2011L	Integrated Principles of Biology 2 Lab			X		
	Botany	PCB 3034C	Introduction to Ecology	X				
	Botany	BOT 5695	Ecosystems of Florida	X				
	Geological Sciences	GLY 1073	Introduction to Global Change	X				
	Geological Sciences	GLY 2038C	Geology and the Environment	X				
	Geography	GEO 3370	Conservation Resources	X			Abe Goldman	http://www.geog.ufl.edu/courses/2006spring/GE0%203370%2006%20Syllabus.pdf

	Geography	GEO 6938	Land Coverage Land Use Change Seminar	X			Jane Southworth	http://www.geog.ufl.edu/courses/2006spring/js6938spsyl.pdf
	Philosophy	PHM 3032	Ethics and Ecology	X				
	Political Science	INR 4350	International Environmental Relations	X				
	Sociology	SYD 3410	Urban Sociology	X				
	Anthropology	ANG 5266	Economic Anthropology	X				
	Sociology	SYD 6436	Metropolitan Growth and Development	X				
Engineering	Civil and Coastal Engineering	CEG 4112	Geotech Aspects of Landfill Design	X				
	Civil and Coastal Engineering	CWR 4812	Water Resources Engineering	X				
	Geological Sciences	GLY 1073	Introduction to Global Change	X				
	Environmental Engineering Sciences	EES 3000	Environmental Science and Humanity	X				
	Environmental Engineering Sciences	ENV 4351	Solid and Hazardous Waste Management	X				
	Environmental Engineering Sciences	ENV 4353	Solid Waste Systems Design			X		

	Environmental Engineering Sciences	EES 5307	Ecological Engineering	X				Mark Brown	http://www.ees.ufl.edu/homepp/brown/ecoeng.asp
	Environmental Engineering Sciences	EES 6308C	Wetland Ecology	X	X				
	Environmental Engineering Sciences	ENV 6215	Health Physics	X					
Business Administration	Economics	ECP 3113	Population Economics	X					
	Economics	ECP 3302	Environmental Economics and Resource Policy	X					
	Economics	ECO 4504	Public Economics	X					
Health and Human Performance	Tourism, Recreation and Sport Management	LEI 6834	Ecotourism	X					
Law	Law	LAW 7474	Agricultural Law and Policy	X					
	Law	LAW 6471	Environmental Law	X					
	Law	LAW 6930	Externship	X					
	Law	LAW 6460	Land Use Planning and Control	X					
	Law	LAW 6936	Environmental Justice	X					
	Law	LAW 6472	Natural Resources Law	X					

Design, Construction and Planning	Urban and Regional Development	URP 6884	Community Conservation and Revitalization	X				
	Urban and Regional Development	URP 6541	Economic Development Planning	X				
	Urban and Regional Development	URP 6718	Bikeways Planning and Design	X				
	Landscape Architecture	LAA 6382	Ecology and Environmental Policy	X				http://www.dcp.ufl.edu/landscape/classes/6382.aspx
	Landscape Architecture	LAA 5331	Site Design Methodologies	X				
	Landscape Architecture	LAA 4353	Landscape Architecture Senior Studio			X		http://www.dcp.ufl.edu/landscape/classes/4353.aspx
	Landscape Architecture	LAA 4359	Environmental Planning & Design Studio			X		http://www.dcp.ufl.edu/landscape/classes/4359.aspx
** Courses numbered above 5000 are graduate level								

Appendix 2 - UF Certificates and Programs Related to Sustainability

College	Department	Certificate	Contact
Design, Construction and Planning	Architecture	Certificate in Sustainable Architecture - Graduate minimum of 12 credit hours above	http://www.dcp.ufl.edu/arch/pdf/Sust-Arch-11-05.pdf
Law	Law	Environmental and Land Use Law Program - Graduate 8 hours above the J.D. requirement	http://www.law.ufl.edu/elulp/index.htm
Liberal Arts & Sciences	Interdisciplinary	Certificate in Environmental Studies - Undergraduate 14 credit hours total	http://www.registrar.ufl.edu/catalogarchive/00-01-catalog/colleges/engineering/09_003_Minors_Certificates.htm
College	Department	Program with Curriculum	Contact
Ag and Life Sciences	Natural Resources and Environment	Human Sustainability Studies - Graduate	http://snre.ufl.edu/graduate/curriculum.htm
Ag and Life Sciences	Wildlife Ecology and Conservation	Program for Studies in Tropical Conservation - Graduate	http://www.wec.ufl.edu/entities/ps/tc/
Ag and Life Sciences	University Wide	Minor in Agriculture and Natural Resource Ethics	http://www.fred.ifas.ufl.edu/programs/nre_main.php
Liberal Arts & Sciences	Latin American Studies	Tropical Conservation and Development Program	http://www.latam.ufl.edu/tcd/about.html
Design, Construction and Planning	Urban and Regional Planning	Geofacilities Planning and Information	http://www.geoplan.ufl.edu/

Liberal Arts & Sciences	Religion	Religion and Nature Program	http://www.religion.ufl.edu/gradprog/field-nature.html
Design, Construction and Planning	Urban and Regional Planning	Land Use and Transportation Modeling Research program	http://www.geoplan.ufl.edu/classes/lutmrp/index.html
Design, Construction and Planning	Urban and Regional Planning	Community Outreach Partnership Program	http://www.geoplan.ufl.edu/classes/copp/index.html
College	Department	Program	Contact
Ag and Life Sciences	Natural Resources and Environment	Agro-Ecology Program	http://www.snre.ufl.edu/programs/agroecology.htm
Ag and Life Sciences	Natural Resources and Environment	Ecological Restoration Program	http://www.snre.ufl.edu/programs/ecorestoration.htm
Ag and Life Sciences	Natural Resources and Environment	Ecotourism Program	http://www.snre.ufl.edu/programs/ecotourism.htm
Ag and Life Sciences	Natural Resources and Environment	Program for Resource Efficient Communities	http://www.energy.ufl.edu/default.htm
Liberal Arts & Sciences	Family, Youth and Community Services	Community Development & Sustainable Natural Resource Systems in Florida - Undergraduate	http://fycs.ifas.ufl.edu/areas/sus_ag.htm

Appendix 3 - UF Centers, Institutes & Outreach Programs Related to Sustainability

College	Department	Center/Institute	Contact
Engineering	Environmental Engineering Sciences	Center for Environmental Policy	http://www.ees.ufl.edu/cep/
Ag and Life Sciences	Natural Resources and Environment	PLUS: People and Land Use Strategies	http://www.snre.ufl.edu/programs/plus.htm
Design, Construction and Planning	Building Construction	Powell Center for Construction and Environment	http://www.cce.ufl.edu/
Design, Construction and Planning	Architecture	Center for Environmental Planning and Design in the Americas	http://troparc.dcp.ufl.edu/index.html
Liberal Arts and Sciences	Cross-Disciplinary	Land Use and Environmental Change Institute	http://www.clas.ufl.edu/lueci/home.htm
Engineering	Environmental Engineering Sciences	The Center for Wetlands	http://www.cfw.ufl.edu/
Ag and Life Sciences	Food and Resource Economics	Florida Natural Resource Leadership Institute	http://nrli.ifas.ufl.edu/
Ag and Life Sciences	Food and Resource Economics	International Agricultural Trade & Policy Center	http://www.iatpc.fred.ifas.ufl.edu/
Ag and Life Sciences	Forest Resource and Conservation	Center for Subtropical Agroforestry	http://cstaf.ifas.ufl.edu/
Design, Construction and Planning	Building Construction	Shimberg Center for Affordable Housing	http://www.shimberg.ufl.edu/contact.html
Design, Construction and Planning	Urban and Regional Planning	Center for Building Better Communities	http://www.dcp.ufl.edu/urp/research/centers/cbbc.aspx
Design, Construction and Planning	Architecture	Center for Health and the Built Environment	http://chbe.dcp.ufl.edu/index.php
Health and Human Performance	Tourism, Recreation and Sport Management	Center for Tourism Research and Development	http://www.hhp.ufl.edu/trsm/Template/CTRD_index2.htm

Liberal Arts and Sciences	Zoology	Archie Carr Center for Sea Turtle Research	http://accstr.ufl.edu/
Liberal Arts and Sciences	Latin American Studies	Center for Latin American Studies	http://www.latam.ufl.edu/
Law	Law	Center for Governmental Responsibility	http://www.law.ufl.edu/cgr/
IFAS		Center for Tropical Agriculture	http://cta.ufl.edu/thrips.htm
IFAS		Center for Aquatic and Invasive Plants	http://plants.ifas.ufl.edu/
IFAS		Everglades Research and Education Center	http://erec.ifas.ufl.edu/
IFAS		Integrated Pest Management Florida	http://ipm.ifas.ufl.edu/
IFAS		Florida Center for Renewable Chemicals & Fuels	http://fcrc.ifas.ufl.edu/index.htm
IFAS		Center for Organic Agriculture	http://organic.ifas.ufl.edu/
Cross-Campus		The Water Institute	http://waterinstitute.ufl.edu/index.html

Appendix 4 - Sustainability Related Programs at Peer Institutions and Others

Institution	Degree / Certificate	Contact	Website	Comment
Arizona State University	School of Sustainability PhD, MS, MA and Undergraduate Degrees	schoolofsustainability@asu .edu	http://schoolofsustainability.asu.edu/index.htm	new program - 2007 offering undergraduate and graduate/phd programs
Columbia University	PhD in Sustainable Development	Dean Mona Khalidi at sipa_phd@columbia.edu	http://sipa.columbia.edu/academics/degree_programs/phd/index.html	School of International and Public Affairs
** Duke University	Sustainability Studies Certificate Program	Tavey McDaniel, Outreach & Communications Coordinator for Sustainability, tavey.mcdaniel@duke.edu 919-660-1434	http://www.duke.edu/web/ESC/documents/Sustainability%20Certificate%20Proposal%20FINAL.pdf	Proposed interdisciplinary certificate program with tracts at both undergraduate and graduate levels
Duke University	Masters in Environmental Management	Dean Urban - DeanU@duke.edu	http://www.env.duke.edu/programs/professional/csp-long.html	Offers 9 specialty tracks and 2 certificates open to the campus
University of Michigan	Erb Institute - MBA/ MS	Thomas Lyon, Director 734-647-9709 erbinstitute@umich.edu	http://www.erb.umich.edu/	MBA/MS program - School of Natural Resources and School of Business -- have data on students, etc. on website
University of Minnesota	Sustainability Studies Minor	sustainu@umn.edu	http://www.sustainability.umn.edu/minor/index.html	new for Fall 2006
Missouri Southern State University	Ecolonomics Certificate	Dr. John Messick messick-j@mssu.edu 417-625-9617	http://www.mssu.edu/ecologics/	

Oregon State University	Graduate Certificate Program in Sustainable Natural Resources	Cheryll Alex cheryll.alex@oregonstate.edu	http://www.cof.orst.edu/SNRcertificate/	recently re-structured. Now an E-Campus program
** Portland State University	Graduate Sustainability Certificate		http://www.sustain.pdx.edu/ap_certificates.php#electives	proposed program
Michigan Technological University	Graduate Certificate in Sustainability		http://www.sfi.mtu.edu/grad_certificate_for_web.htm	
Florida International University	Graduate Certificate in Sustainable Communities	Laura A. Ogden Certificate Coordinator Laura.Ogden@fiu.edu	http://www.fiu.edu/orgs/socant/SusComCertificate.htm	
Goddard College, VT	MA in Socially Responsible Business and Sustainable Communities	Brenda Hawkins at brenda.hawkins@goddard.edu	http://www.goddard.edu/academic/MA-SRBSC.html	Focus area on Sustainable Community Development track - Began August 2006
New College of California	MBA in Sustainable Enterprise	Stacie Wickham Green MBA Director of Marketing and Admissions (707) 523-9034 stacie@greenmba.com	http://www.greenmba.com/	
Slippery Rock University of Pennsylvania	MS in Sustainable Systems	Dr. Daniel Dziubek, (724)738-2958, daniel.dziubek@sru.edu	http://www.academics.sru.edu/pree/ssgrad.html	program began in 1990
SayBrook Graduate School	Building a Sustainable World Certificate	Not Available	http://www.saybrook.edu/academics/certificates.asp?strContent=Building%20a%20Sustainable%20World	
Presidio School of Management	MBA in Sustainable Management	E. Byron Nahser, Provost	http://www.presidiomba.org/academic/index.html	

Bainbridge Graduate Institute	MBA in Sustainable Business	Jill Bamburg, Dean of MBA program	http://www.bgiedu.org/content/view/9/40/	
Baindridge Graduate Institute	Certificate in Sustainable Business	Not available	http://www.bgiedu.org/content/view/239/171/	
** Proposed programs				
Institution	Center / Program	Contact	Website	Comment
University of Michigan	Center for Sustainable Systems	Co-Directors: Jonathan Bulkley jbulkley@umich.edu and Gregory Keoleian gregak@umich.edu	http://css.snre.umich.edu/	part of the school of natural resource and environment
University of Michigan	Erb Institute - MBA/ MS	734-647-9709 erbinstitute@umich.edu	http://www.erb.umich.edu/	MBA/MS program - School of Natural Resources and School of Business -- have data on students, etc. on website
Arizona State University	Global Institute of Sustainability		http://sustainable.asu.edu/gios/index.htm	
George Washington University	Environmental and Social Sustainability Initiative	Mark Starik, Director essi@gwu.edu	http://www.gwu.edu/~essi/	
Michigan Technological University	Sustainable Futures Institute	1-906-487-2520 sfi@mtu.edu or Dr. Jane Zhang at qiong@mtu.edu	http://www.sfi.mtu.edu/	Multi-department program - est. in 2003
Columbia University	The Earth Institute	Louise Rosen at lar46@columbia.edu.	http://www.earth.columbia.edu/education/programs_of_study/index.html	Institute affiliated with many departments and degree programs

Penn State University	Teaching Sustainability in Engineering through Public Scholarship	Dr. David Riley		http://www.engr.psu.edu/cfs/index.aspx	Funded by 3 year grant from the National Science Foundation
Georgia Institute of Technology	The Institute for Sustainable Technology and Development	carol.carmichael@marc.gatech.edu		http://www.sustainable.gatech.edu/	adapting curriculum of various school to include sustainability but does not offer courses
University of Oregon	Institute for a Sustainable Environment	Robert Ribe, Director Dorothy Bollman, Office Coordinator, 541-346-0675		http://gladstone.uoregon.edu/~enviro/	
Ithaca College, NY	The Sustainability Initiative	Marian Brown 607-274-3787 mbrown@ithaca.edu		http://www.ithaca.edu/sustainability/	multi-department courses
Ithaca College, NY	Center for Natural Sciences - CNS Sustainability Group	Susan Swensen sswensen@ithaca.edu		http://www.ithaca.edu/sustainability/curriculum_cns.php	new program
De Anza College, CA	Kirsch Center	Pat Cornely cornelypat@fhda.edu		http://kirschcenter.deanza.edu/index.php?option=content&pccontent=1&task=view&id=30&Itemid=82	community college level - focus on sustainable buildings

Appendix 5 - Selected Degree Programs at Peer & Other Institutions

Institution	Program / Center	Students Enrolled / Interested	Faculty Involved	Contact	Comment
Arizona State University	School of Sustainability	Graduate: 50 Undergrad: 5	16 Appointed 12 Affiliated 19 Associated	Lisa Murphy lisa.m.murphy@asu.edu	New program beginning in 2007 - numbers have already exceeded projections for graduate program in year one
University of Michigan	Erb Institute / MBA MS	Graduate: 17 Phd: 10	32 Affiliated	Thomas P. Lyon, Director tplyon@umich.edu	Relatively new program with first class graduating in 2007
Columbia University	PhD in sustainable Development	18 students - 6 students admitted every year since inception	56 Affiliated	Dean Mona Khalidi sipa_phd@columbia.edu	Applications for Fall: 270. Only 6 students will be admitted to program / year
Duke University	Masters in Environmental Management	150 students currently enrolled	10 Core faculty 25 Affiliated	Lynn A. Maguire lmaguire@duke.edu	Multiple tracks offered within program and 2 certificates open to all masters students

Appendix 6 - Existing Interdisciplinary Certificates at UF

	Certificate	Description
Graduate		
	African Studies	The Center for African Studies, a National Resource Center on Africa, directs and coordinates interdisciplinary instruction, research, and outreach related to Africa. In cooperation with participating departments throughout the University, the Center offers a Certificate in African Studies at both the master's and doctoral levels. The curriculum provides a broad foundation for students preparing for teaching or other professional careers in which a knowledge of Africa is essential
	Agroforestry	The agroforestry interdisciplinary concentration is administered through the School of Forest Resources and Conservation. It offers facilities for interdisciplinary graduate education (M.S., Ph.D.) by combining course work and research around a thematic field focusing on agroforestry, especially in the context of tropical land use. In conjunction with the graduate degree, a student can earn a specialization or minor in agroforestry by fulfilling certain requirements. Students who have a primary interest in agroforestry and undertake graduate research on an agroforestry topic can seek the specialization. Those who have an active interest and some training in agroforestry, but do not conduct graduate research on an agroforestry topic, can earn a minor. Candidates who fulfill the applicable requirements can have their transcripts inscribed, upon request, with the citation Specialization in Agroforestry or Minor in Agroforestry.
	Ecological Engineering	The Graduate Certificate in Ecological Engineering is for graduate engineering students wishing to develop expertise in ecological solutions to engineering problems. Students interested in the certificate must apply for admission to the program through The Department of Environmental Engineering Sciences. The program is open to individuals in any graduate program who hold an undergraduate engineering degree, or who complete additional undergraduate engineering articulation courses.
	Geographic Information Sciences	The Interdisciplinary Concentration for Geographic Information Sciences (ICGIS) is designed to integrate existing GIS resources on campus, for graduate students, as a response to changing regulatory environments in institutions and governments at all levels. This new concentration has established a standard set of courses and activities that would allow graduate students to become experts in the creation, study, and use of geographic information. Such graduates would be in strong positions to meet future regulatory requirements for certification as professionals. Structurally, the ICGIS has established a five-category curriculum that would add several courses to the standard M.S., M.A., M.E., or Ph.D. requirements and would result in official recognition of having completed the GIS concentration by statements on transcripts and a certificate

	Gerontological Studies		The Center for Gerontological Studies offers the minor in gerontology and the Graduate Certificate in Gerontology for master's, specialist, and doctoral students in conjunction with graduate programs in a variety of disciplines and professions. Certificate requirements include a minimum of 12 hours in approved gerontology courses and an approved interdisciplinary research project in gerontology or a topic related to geriatrics
	Health Physics and Medical Physics		Two allied interdisciplinary options, health physics and medical physics, are offered as a cooperative effort of the Departments of Environmental Engineering Sciences and Nuclear and Radiological Engineering, College of Engineering, and the College of Medicine. Degrees are granted by the College of Engineering and include Master of Science, Master of Engineering, Engineer, and Doctor of Philosophy.
	Hydrological Sciences		Interdisciplinary graduate studies in hydrologic sciences are designed for science and engineering students who are seeking advanced training in diverse aspects of water quantity, water quality, and water use issues. Graduate Faculty from 10 departments in three colleges contribute to this interdisciplinary specialization. Depending on academic background and research interests, students may opt to receive the graduate degree in any one of the following departments: Agricultural and Biological Engineering, Civil Engineering, Coastal and Oceanographic Engineering, Environmental Engineering Sciences, Food and Resource Economics, Forest Resources and Conservation, Geography, Geology, Horticultural Sciences, and Soil and Water Science.
	Latin American Studies		The topical concentration clusters course work and research around a thematic field focusing on contemporary Latin American problems. Students may concentrate in Andean studies, Brazilian studies, Caribbean studies, international communications, religion and society, and tropical conservation and development. This option builds on prior professional or administrative experiences and prepares students for technical and professional work related to Latin America and the Caribbean. Graduate Certificates in Latin American Studies - Master's students may earn a Certificate in Latin American Studies along with a degree in agriculture, architecture, business administration, education, fine arts, journalism and communications, and liberal arts and sciences.
	Quantitative Finance		The Quantitative Finance interdisciplinary concentration involves four departments: Industrial and Systems Engineering (College of Engineering), Mathematics (College of Liberal Arts and Sciences), Statistics (College of Liberal Arts and Sciences), and Finance, Insurance, and Real Estate (College of Business Administration). To be eligible for the Ph.D. interdisciplinary concentration, a student must be admitted to the Ph.D. program in one of the participating departments. Students seeking admission to the concentration should have strong quantitative skills and a degree in one of the relevant fields such as finance, engineering, statistics, or mathematics. Students with a background in several disciplines are welcome.

	Tropical Agriculture		The Center for Tropical Agriculture, within the Institute of Food and Agricultural Sciences, seeks to stimulate interest in research and curriculum related to the tropical environment and its development. Minor in Tropical Agriculture.--An interdisciplinary minor in tropical agriculture is available at both the master's and doctoral levels for students majoring in agriculture, forestry, and other fields where knowledge of the tropics is relevant. Certificate in Tropical Agriculture (CTA).--A program emphasizing breadth in topics relevant to tropical agriculture (with certificate) for graduate students is available through the College of Agriculture. The CTA is designed to prepare students for work in situations requiring knowledge of both the biological and social aspects of tropical agriculture.
	Wetlands		Any graduate student at the University of Florida may earn a Certificate in Wetlands. The certificate helps prepare students for careers related to wetland science and management. Course work includes an introductory wetland course and courses selected from several related categories including hydrology, biology, environmental policy and law, water chemistry, and soils. With planning early in a student's program, courses for the certificate can be blended with the graduate program of study.
Undergraduate			
	Asian American Studies		This is an interdisciplinary program that examines the history and experiences of people of Asian descent in America. Students must complete 12 credits of approved courses with a grade of C or better to earn a certificate. Courses are offered by the departments of English, History, Political Science, Sociology and the Center for Women's Studies and Gender Research.
	Ceramics		The School of Art and Art History (SAAH) certificate program with an emphasis in ceramics allows students with a major outside of the visual arts to take a series of classes within the studio arts where clay is used as the art material. The certificate with an emphasis in ceramics is awarded by SAAH to acknowledge a concentration in ceramics within a student's external major and general course of study.
	Dance in Healing		The dance area, in conjunction with the Center for the Arts in Healthcare Research and Education (CAHRE) offers this certificate to recognize special competencies and achievements in the use of movement to enhance health and healing.
	Environmental Studies		A certificate program is available to students concerned with environmental issues. Electives can be structured around an environmental theme, giving experience in an area that may expand career opportunities and increase the student's knowledge of the physical environment
	European Union Studies		The European Union Studies Program certificate (EUSP-C) in the College of Liberal Arts and Sciences is designed to give UF students the opportunity to gain multidisciplinary expertise on EU-related affairs. The certificate program is open to all UF undergraduates.

	Human Services and Aging	The Center for Gerontological Studies offers a certificate in human services and aging for students interested in careers in human services after completion of the B.A. or B.S. degree, and for students who plan to complete advanced degrees in fields related to counseling, social work or health.
	International Relations	The certificate program includes two courses in the international relations theory core, along with introductory and advanced course work in four major subfields: international political economy, global security, foreign policy and international organization. Most graduate programs, foreign service organizations and private corporations will be looking for individuals with broad training. Therefore, students should pursue related study in other political science fields and other departments
	International Studies	Available to Undergraduate students who want to earn a certificate in international studies in the College of Agricultural and Life Sciences
	Jewish Studies	There is no formal language or subject requirements for the certificate other than to take any four courses in Jewish studies.
	Latin American Studies	The Center for Latin American Studies, in cooperation with the colleges of Liberal Arts and Sciences, Agricultural and Life Sciences, Business Administration, Design, Construction and Planning, Education, Fine Arts and Journalism and Communications, offers a certificate in Latin American studies for undergraduate students. Through special arrangements, students in other colleges also may obtain the certificate.
	Public Affairs	The certificate in public affairs is designed for those students interested in a career in government
	Retailing Leadership	The Walgreens Certificate in Retailing Leadership is designed to stimulate interest in careers in retailing
	Russian and East European Area Studies	The program in Russian and East European area studies provides a broad foundation for graduate work and careers in government service. The program is based on a major in economics, foreign languages, geography, history, philosophy, political science or religion.
	Translation Studies	This program prepares students for careers in translation in government, business, law, health care and other fields. It focuses on text translation. The program is open to translators who work in any language pair, pending the availability of faculty mentors in less commonly taught languages.