

## Unit Review

### Undergraduate Program

*What is the main purpose of the undergraduate program and how does it fit in the context of the discipline and compare to similar programs at institutions in the state, region, and nation?*

The main purpose of the undergraduate program in the Department of Crop & Soil Sciences is to produce society-ready graduates who can effectively contribute to agricultural and environmental programs in Georgia, the US, and the world. Agriculture is a rapidly changing enterprise with new developments in biotechnology, management options, and intense globalization affecting rapid change in the agricultural sector of the economy. At the same time, the environmental impacts of agricultural enterprises continue to be carefully scrutinized for their impacts on the environment and natural resource base. Increasingly, our students must work with different clientele groups to mitigate the real and perceived effects of agricultural production, urbanization and sub-urbanization on environmental quality and must be ready to contribute in such a demanding setting. During the 1980's and 1990's, many Agronomy and Crop & Soil Science departments at land-grant institutions have struggled with student enrollment because of a diminishing number of growers and stagnant agricultural economy. Our department is no different. A decline in the agricultural economy in Georgia and changes in the demographics of students attending the University of Georgia itself during the 1990's resulted in few students interested in our traditional instructional programs. Unlike many of our peer institutions, the Department of Crop & Soil Sciences has changed the undergraduate curricula to be more relevant and attractive to the current student body instead of hoping for more traditional students to appear. Thus, we have added teaching programs at the Tifton and Griffin campus to attract traditional students who may not otherwise be able or want to attend classes on the Athens campus while adding majors in Environmental Chemistry, Water & Soil Resources, and Applied Biotechnology on the Athens campus to attract more of the available students on the Athens campus.

*How does the program contribute to Crop & Soil Science's mission and goals?*

Academics are a core component of the Department of Crop & Soil Sciences mission. Our mission statement includes a statement that the purpose of the department is to "Provide baccalaureate and graduate education in crop, soil, and environmental sciences that promotes excellence in student achievement and prepares students to effectively contribute and excel in a changing world" and we are to "...disseminate this knowledge through student education and public outreach programs..." Changes in our academic programs over the past seven years underscore the central mission of instruction to the department. As faculty programs on the Athens campus have changed from traditional agronomic areas into plant molecular biology and environmental stewardship, our academic programs have changed as well so that the information garnered in our research programs can be disseminated to a new generation of students. The new teaching programs at Tifton and Griffin are part of this process as well. At the Tifton campus, the instructional program is geared towards the traditional agronomy student in as much that the research and extension programs on the Tifton campus are oriented towards the intensive row crops of the coastal plain of Georgia. On the Griffin campus, faculty research programs are

oriented toward the impact of urbanization on environmental quality and the instructional program on the Griffin campus has that same orientation.

*What are the program's main strengths and weaknesses?*

#### Strengths

- Commitment of faculty on all three campuses to undergraduate instruction and student advising.
- Availability of courses that provide students with experiential learning experiences, especially in soil courses on the Athens campus and the suite of courses that are offered for the Agriscience and Environmental Systems major at Tifton.
- Interdisciplinary nature of instructional programs in environmental sciences and biotechnology on the Athens campus and the traditional agricultural production area on the Tifton campus that allows the development of a major that no single department could offer.
- Availability of technology for instruction. In the last seven years, classrooms have been updated with the latest in presentation technology available and students have access to modern instrumentation in many of their laboratories on the Athens campus. The teaching laboratories have been renovated to better accommodate student needs. On the Tifton and Griffin campuses, new classrooms and teaching laboratories have been constructed to support new teaching programs on those campuses.
- Availability of teaching programs in three geographically diverse areas of the state so students that may not otherwise be able to attend can.

#### Weaknesses

- Having a faculty that are not in one location. This provides many challenges in courses that can be offered because of fewer faculty available at any one campus, the difficulties of administering teaching programs on three campuses, and the resource issues involved in maintaining instructional programs on three campuses.
- On the Athens campus, attracting enough students to make a viable program has been a weakness. The inability to attract students led to the deactivation of the Crop Science and the reorganization of the Environmental Soil Science major.

*What curricular and administrative changes have been made in the program since the last review and what are the reasons for those changes?*

The Crop & Soil Sciences Department has undergone a number of changes in majors offered since the last program review. In 1998, the department offered a major in Crop Science, Environmental Soil Science, and Turfgrass Management and minors with each of these majors. Because of changes in transfer requirements and student interests, the major in Crop Science was deactivated in 2004, the Environmental Soil Science was merged with the BSFR in Forest Environmental Resources to form a BSES and BSFR in Water & Soil Resources in 2005, and the BSES in Environmental Chemistry was added in 2005. In addition, the department is home to the BSA in Agriscience & Environmental Sciences taught at the Tifton campus since 2003 and the Environmental Resource Science major taught at the Griffin campus since 2005. The department also is a contributing member of the BSAB in Applied Biotechnology Plant Science Area of Emphasis. These changes have been made to increase student enrollment and make our

teaching programs more relevant and attractive to a changing student body at the University of Georgia.

*What evidence can you provide that your students are attaining the program's learning outcomes and what changes are needed in the program to improve their performance?*

The department head conducts exit interviews with graduating students and surveys of alumni three years after graduation. These instruments have been used for ten years and we have used them to make changes to the curriculum where necessary. For example, we have been told that our students need better oral and written communication skills. The department has made changes in the Turfgrass Management major to increase requirements for oral communication courses and we are examining ways to increase writing in our existing courses. Our surveys have indicated that the department needs to do a better job of working with students in the job placement area. In the past seven years, we have converted our senior seminar course (CRSS 4270) to a job preparatory course where students receive information on resume development and conduct mock job interviews. Subsequently, we have improved our scores with alumni concerning job placement.

*How does the Department of Crop & Soil Sciences advise and mentor its Undergraduate students? Who in the department has responsibility for these tasks?*

Only tenure track faculty advise and mentor students in the Department of Crop & Soil Sciences. New students in the department are initially advised by the undergraduate coordinator. During this initial advising session, the career interests of the student are evaluated. Based on the student's major and career interest within the major, the student is assigned to a faculty member who can best advise and mentor the student. In the past two years, we have conducted surveys concerning the effectiveness of advising in the department. Greater than 90% of students in all of our majors have satisfied or very satisfied with their advising experience. Several faculty in the department also advise undergraduate students on research projects.

*What information exists on the placement and success of your graduates?*

We have surveyed Crop & Soil Science alumni three years after graduation for the past ten years. In each of these surveys, > 90% of the survey respondents are working in areas related to their field of study.

Data concerning major that Crop & Soil Sciences has responsibility.

### **Crop Science**

	1999	2000	2001	2002	2003	2004	2005
Undergraduate Enrollment	20	10	7	8	4	7	5
Undergraduate Degrees Conferred	11	7	3	5	3	4	3
Undergraduate Credit Hours							

### **Environmental Soil Science (became Water & Soil Resources in 2005)**

	1999	2000	2001	2002	2003	2004	2005
Undergraduate Enrollment	21	16	12	11	10	7	15
Undergraduate Degrees Conferred	6	8	5	15	14	27	24
Undergraduate Credit Hours							

### **Turfgrass Management**

	1999	2000	2001	2002	2003	2004	2005
Undergraduate Enrollment	39	37	32	19	17	29	30
Undergraduate Degrees Conferred	11	9	14	15	4	7	3
Undergraduate Credit Hours							

### **Environmental Chemistry**

	1999	2000	2001	2002	2003	2004	2005
Undergraduate Enrollment	NA	NA	NA	NA	NA	NA	2
Undergraduate Degrees Conferred	NA	NA	NA	NA	NA	NA	NA
Undergraduate Credit Hours							

**Agriscience & Environmental Systems (Tifton campus)**

	1999	2000	2001	2002	2003	2004	2005
Undergraduate Enrollment	NA	NA	NA	NA	21	24	25
Undergraduate Degrees Conferred	NA	NA	NA	NA	NA		9
Undergraduate Credit Hours							

**Environmental Resource Science (Griffin campus)**

	1999	2000	2001	2002	2003	2004	2005
Undergraduate Enrollment	NA	NA	NA	NA	NA	NA	8
Undergraduate Degrees Conferred	NA	NA	NA	NA	NA	NA	NA
Undergraduate Credit Hours							

**DISTRIBUTION OF GRADES BY COURSE ID  
Spring & Fall, 2005**

Course ID	% A	% B	% C	% D	% F	% WF	% W	% Other	Course GPA	#
CRSS1020	23.5	58.8	11.7	.0	.0	.0	5.8	.0	3.12	17
CRSS2010	16.6	26.6	36.6	10.0	.0	.0	6.6	3.3	2.55	30
CRSS2830	51.8	36.7	1.2	.0	.0	.0	8.8	1.2	3.56	79
CRSS3060	23.6	41.2	17.5	6.1	2.2	.0	8.3	.7	2.85	131
CRSS3270	28.0	50.0	22.0	.0	.0	.0	.0	.0	3.06	50
CRSS3500	22.2	33.3	22.2	5.5	5.5	.0	11.1	.0	2.68	18
CRSS3540	100.0	.0	.0	.0	.0	.0	.0	.0	4.00	10
CRSS4090	35.7	57.1	7.1	.0	.0	.0	.0	.0	3.28	14
CRSS4250	7.1	28.5	50.0	14.2	.0	.0	.0	.0	2.28	14
CRSS4340	35.2	29.4	29.4	5.8	.0	.0	.0	.0	2.94	17
CRSS4540	25.0	58.3	.0	.0	8.3	.0	8.3	.0	3.00	12
CRSS4580	53.8	38.4	.0	.0	.0	.0	7.6	.0	3.58	13
CRSS4590	23.0	15.3	30.7	15.3	.0	.0	15.3	.0	2.54	13
CRSS4610	40.0	50.0	10.0	.0	.0	.0	.0	.0	3.30	10

CRSS4660	30.7	46.1	23.0	.0	.0	.0	.0	.0	3.07	13
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**Course and section counts (previous 3 years)**

Course	Enrollment (Section Count)								
	2003			2004			2005		
	Spring	Summer	Fall	Spring	Summer	Fall	Spring	Summer	Fall
CRSS(FORS) 1020	--	--	--			7 (1)	--		9 (1)
CRSS 2010	--	--	43 (1)			28 (1)	--		30 (1)
CRSS 2010L	--	--	17 (4)			13 (4)	--		30 (2)
CRSS 2830	--	--	15 (1)			39 (1)	--		79 (1)
CRSS(FORS) 3060	40 (1)	--	55 (1)			47 (1)	35 (1)		57 (1)
CRSS 3060L	40 (5)	--	55 (7)			47 (6)	35 (5)		59 (7)
CRSS 3270	46 (1)	--	--			--	50 (1)		--
CRSS 3270L	17 (1)	--	--			--	24 (1)		--
CRSS(ENTO) 3500	5 (1)	--	--			--	5 (1)		--
CRSS 3540	1 (1)	--	6 (1)			--	4 (1)		6 (1)
CRSS3910	1 (1)	--	2 (2)			--	--		1
CRSS 3920	--	--	5 (1)			2	--	1	6
CRSS 3930	--	--	--			3	2		9
CRSS 3990	1 (1)	--	2 (2)			2	--		--
CRSS 4090	--	--	7 (1)			11	--		14
CRSS 4170L	--	3 (1)	--			3 (1)			
CRSS 4220	--	--	2 (2)			--	1		--
CRSS(ENTO)(PATH) 4250	7 (1)	--	--			--	4 (1)		--
CRSS 4260	11 (1)	--	--			--	24 (1)		--
CRSS 4340	--	--	9 (1)			16 (1)	--		17 (1)
CRSS 4340L	--	--	10 (2)			15 (1)	--		16 (1)
CRSS 4400	7 (1)	--	--			--	5 (1)		--
CRSS 4250	8 (1)	--	--	--	--	--	--	--	--
CRSS 4540	13 (1)	--	--			12 (1)	--		12 (1)
CRSS 4540L	13 (1)	--	--			12 (1)	--		12 (1)
CRSS 4580	10 (1)	--	--				--		13 (1)
CRSS 4580L	10 (1)	--	--				--		13 (1)
CRSS(HORT) 4590	--	--	24 (1)				19		25 (1)

CRSS(HORT) 4590L	--	--	48 (1)				12 (1)		7 (1)
CRSS 4600	--	--	13 (1)				18		7 (1)
CRSS 4600L	--	--	13 (2)				18 (2)		
CRSS 4610	7 (1)	--	--				10 (1)		--
CRSS 4610L	7 (1)	--	--				10 (1)		--
CRSS 4660	--	--	--				13 (1)		
CRSS 4670	11 (1)	--	--				8 (1)		--
CRSS 4670L	9 (1)	--	--				7 (1)		--
CRSS 4740	1 (1)	--	--				2 (1)		--
CRSS 4740L	1 (1)	--	--				2 (1)		--
CRSS(ANTH)(ECOL)(HORT)(BIOL)(GEOG) 4930	6 (1)	--	--				7 (1)		
CRSS(ANTH)(ECOL)(HORT)(BIOL)(GEOG) 4931	--	8 (1)	--				--	5	
EETH 3230	--	--	--				--		1 (1)
EETH 4000	6 (1)	--	7 (1)				5 (1)		--
EETH 4010	4 (1)	3 (1)	3 (1)				1 (1)		--
EETH 4230	--	--	--				1 (1)		
BTEC 3990	--	--	--					1	2 (1)
AESC 4530	--	--	--						7 (1)
AESC 4960	--	--	--					1	3 (1)
GEOG 4375	--	--	--						
BIOL 4960H	--	--	--						
GENE 4960	--	1 (1)	--						