

# Plant and Environmental Sciences – Agricultural Biotechnology Concentration 2015-16

## Freshman Year

First Semester			Second Semester		
BIOL 1030	General Biology <sup>1</sup>	3	BIOL 1040	General Biology II <sup>1</sup>	3
BIOL 1050	General Biology Lab. I <sup>1</sup>	1	BIOL 1060	General Biology Lab II <sup>1</sup>	1
CH 1010	General Chemistry	4	CH 1020	General Chemistry	4
MATH 1020	Intro. To Math. Analysis <b>OR</b>	3	ENGL 1030	Accelerated Composition	3
MATH 1060	Calculus of One Variable I	4	STAT 2300	Statistical Methods I	3
PES 1040	Introduction to Plant Science	3	Arts and Humanities (Non-Lit.) Requirement <sup>2</sup>		3
Semester Hours: 14-15			Semester Hours: 17		

<sup>1</sup>BIOL 1100 may substitute for BIOL 1030/1050 and BIOL 1110 may substitute for BIOL 1040/1060; BIOL 1100 and 1110 are recommended for students in the Agricultural Biotechnology Concentration.

<sup>2</sup>See General Education Requirements. PHIL 1030 is recommended for students in the Agricultural Biotechnology Concentration.

## Sophomore Year

First Semester			Second Semester		
BIOL 3040	Biology of Plants	3	APEC 2050	Agriculture and Society	3
CH 2010	Survey of Organic Chemistry	3	BIOL 3350	Evolutionary Biology	3
CH 2020	Survey of Organic Chemistry Lab.	1	COMM 1500	Intro. To Human Comm. <b>OR</b>	3
ENT (BIOL) 3010	Insect Biology and Diversity	4	COMM 2500	Public Speaking	3
PLPA 3100	Principles of Plant Pathology	3	GEN 3000	Fundamental Genetics	3
			MICR 3050	General Microbiology	4
			PES 4550	Seminar	1
Semester Hours: 14			Semester Hours: 17		

## Junior Year

First Semester			Second Semester		
BCHM 3050	Essential Elements of Biochem.	3	BIOL 4010	Plant Physiology	3
BIOL 4340	Biological Chem. Lab. Tech	2	BIOL 4020	Plant Physiology Lab.	1
ECON 2000	Economic Concepts <b>or</b>	3	ENGL 3150	Scientific Writing and Comm.	3
ECON 2110	Principles of Microeconomics	3	PES 4010	Academic and Professional Dev.	1
PES 3350	Agricultural Biotechnology	3	PES 4050	Plant Breeding	3
PES 4220	Major World Crops	3	PES 4090	Biology of Invasive Plants	3
Social Science Requirement <sup>1</sup>		3			
Semester Hours: 17			Semester Hours: 14		

## Senior Year

First Semester			Second Semester		
PES 4450	Regulatory Issues and Policies	2	PES 3500	Practicum	3
PES 4900	Beneficial Soil Organisms in Plant Growth	3	PES (BIOL)	3400 Medical Botany	3
Arts and Humanities (Literature) Requirement <sup>1</sup>		3	Concentration Requirement <sup>2</sup>		9
Concentration Requirement <sup>2</sup>		6			
Semester Hours: 14			Semester Hours: 15		

### Total – 122-123 Total Semester Hours

<sup>1</sup> See General Education Requirements.

<sup>2</sup>Select from a department approved list. Courses to support proficiency in a foreign language also are encouraged.

# Plant and Environmental Sciences – Soil and Water Science Concentration 2015-16

## Freshman Year

First Semester			Second Semester		
BIOL 1030	General Biology <sup>1</sup>	3	BIOL 1040	General Biology II <sup>1</sup>	3
BIOL 1050	General Biology Lab. I <sup>1</sup>	1	BIOL 1060	General Biology Lab II <sup>1</sup>	1
CH 1010	General Chemistry	4	CH 1020	General Chemistry	4
MATH 1020	Intro. To Math. Analysis <b>OR</b>	3	ENGL 1030	Accelerated Composition	3
MATH 1060	Calculus of One Variable I	4	STAT 2300	Statistical Methods I	3
PES 1040	Introduction to Plant Science	3	Arts and Humanities (Non-Lit.) Requirement <sup>2</sup>		3
Semester Hours: 14-15			Semester Hours: 17		

<sup>1</sup>BIOL 1100 may substitute for BIOL 1030/1050 and BIOL 1110 may substitute for BIOL 1040/1060; BIOL 1100 and 1110 are recommended for students in the Agricultural Biotechnology Concentration.

<sup>2</sup>See General Education Requirements. PHIL 1030 is recommended for students in the Agricultural Biotechnology Concentration.

## Sophomore Year

First Semester			Second Semester		
CH 2010	Survey of Organic Chemistry	3	APEC 2050	Agriculture and Society	3
CH 2020	Survey of Organic Chemistry Lab.	1	COMM 1500	Intro. To Human Comm. <b>OR</b>	3
GEOL 1010	Physical Geology	3	COMM 2500	Public Speaking	3
GEOL 1030	Physical Geology Lab.	1	MICR 3050	General Microbiology	4
PES 2020	Soils	4	PHYS 2080	General Physics II	3
PHYS 2070	General Physics I	3	PHYS 2100	General Physics II Lab.	1
PHYS 2090	General Physics I Lab.	1			
Semester Hours: 16			Semester Hours: 14		

## Junior Year

First Semester			Second Semester		
AGM 3010	Soil and Water Conservation	3	BIOL 4010	Plant Physiology <b>and</b>	3
PES 4220	Major World Crops	3	BIOL 4020	Plant Physiology Lab.	1
Concentration Requirement <sup>1</sup>		9	ENGL 3150	Scientific Writing and Comm.	3
			Concentration Requirement <sup>1</sup>		3
			PES 3150	Environment and Agric.	3
			PES 4010	Academic and Professional Dev.	1
			Social Science Requirement <sup>2</sup>		3
Semester Hours: 15			Semester Hours: 17		

## Senior Year

First Semester			Second Semester		
PES 3500	Practicum	3	PES (BE) 4080	Land Treatment of Wastewater and Sludges	3
PES 4030	Soil Genesis and Classification	2	PES 4900	Beneficial Soil Organisms in Plant Growth	3
PES 4550	Seminar	1	Concentration Requirement <sup>1</sup>		6
Applied Spatial Technology Requirement <sup>3</sup>		3	Social Science Requirement <sup>2</sup>		3
Arts and Humanities (Literature) Requirement <sup>2</sup>		3			
Field Scale Environmental Mgt. Requirement <sup>4</sup>		3			
Semester Hours: 15			Semester Hours: 15		

### Total – 123-124 Total Semester Hours

<sup>1</sup> Select from a department-approved list. Courses to support proficiency in a foreign language also are encouraged.

<sup>2</sup> See General Education Requirements.

<sup>3</sup>AGM 4100, FOR 4330, GEOL 4210, or other course approved by advisor.

<sup>4</sup>AGM 4020, GEOL 4090, or other course approved by advisor.

# Plant and Environmental Sciences – Agronomy Concentration 2015-16

## Freshman Year

First Semester			Second Semester		
BIOL 1030	General Biology <sup>1</sup>	3	BIOL 1040	General Biology II <sup>1</sup>	3
BIOL 1050	General Biology Lab. I <sup>1</sup>	1	BIOL 1060	General Biology Lab II <sup>1</sup>	1
CH 1010	General Chemistry	4	CH 1020	General Chemistry	4
MATH 1020	Intro. To Math. Analysis <b>OR</b>	3	ENGL 1030	Accelerated Composition	3
MATH 1060	Calculus of One Variable I	4	STAT 2300	Statistical Methods I	3
PES 1040	Introduction to Plant Science	3	Arts and Humanities (Non-Lit.) Requirement <sup>2</sup>		3
Semester Hours: 14-15			Semester Hours: 17		

<sup>1</sup>BIOL 1100 may substitute for BIOL 1030/1050 and BIOL 1110 may substitute for BIOL 1040/1060; BIOL 1100 and 1110 are recommended for students in the Agricultural Biotechnology Concentration.

<sup>2</sup>See General Education Requirements. PHIL 1030 is recommended for students in the Agricultural Biotechnology Concentration.

## Sophomore Year

First Semester			Second Semester		
CH 2010	Survey of Organic Chemistry	3	APEC 2050	Agriculture and Society	3
CH 2020	Survey of Organic Chemistry Lab.	1	COMM 1500	Intro. To Human Comm. <b>OR</b>	3
ENT (BIOL) 3010	Insect Biology and Diversity	4	COMM 2500	Public Speaking	3
PES 2020	Soils	4	GEN 3000	Fundamental Genetics	3
PLPA 3100	Principles of Plant Pathology	3	MICR 3050	General Microbiology	4
Semester Hours: 15			Semester Hours: 13		

## Summer

ENT 4070	Applied Agricultural Entomology	3
PLPA 4110	Plant Disease Diagnosis I	3

Semester Hours: 6

## Junior Year

First Semester			Second Semester		
APEC 2020	Agricultural Economics <b>or</b>	3	BIOL 4010	Plant Physiology	3
ECON 2110	Principles of Microeconomics	3	BIOL 4020	Plant Physiology Lab.	1
BCHM 3050	Essential Elements of Bioch.	3	ENGL 3150	Scientific Writing and Comm.	3
BIOL 4340	Biol. Chem. Lab Techniques	2	PES 4010	Academic and Professional Dev.	1
IPM 4010	Principles of Integrated Pest Mgt.	3	PES 4050	Plant Breeding	3
PES 4220	Major World Crops	3	PES 4090	Biology of Invasive Plants	3
Concentration Requirement <sup>1</sup>		3	PES 4550	Seminar	1
Semester Hours: 17			Semester Hours: 15		

## Senior Year

First Semester			Second Semester		
PES 4450	Regulatory Issues and Policies	2	PES 3500	Practicum	3
PES 4990	Beneficial Soil Organisms in Plant Growth	3	PES 4520	Soil Fertility and Management	3
Arts and Humanities (Literature) Requirement <sup>2</sup>		3	PES 4530	Soil Fertility Lab.	1
Concentration Requirement <sup>1</sup>		3	Concentration Requirement <sup>1</sup>		6
Social Science Requirement <sup>2</sup>		3			
Semester Hours: 14			Semester Hours: 13		

### Total – 124-125 Total Semester Hours

<sup>1</sup> Select from a department-approved list.

<sup>2</sup> See General Education Requirements.