



THE UNIVERSITY
OF ARIZONA

Interested in producing and managing plants
in a way that conserves natural resources?

B.S., Sustainable Plant Systems



Controlled Environment Agriculture

Develop technologies to efficiently produce plants and plant-based products, with optimized resource consumption, using environmentally, socially and economically sustainable growing systems in arid lands and urban settings.



Urban Horticulture

Explore the use of plants in urban and suburban residential and commercial settings: urban plant selection, sustainable landscape design and management, community gardens, indoor and outdoor horticultural production techniques.



Agronomy

Develop low water use and disease resistant plants that maximize crop yield and plant health in field production where marginal lands often constrain plant production.



Fresh Produce Safety

(A Yuma-based program.) Understand how production chains become contaminated with diseases, and learn Good Agricultural Practices (GAP) for field and harvest of leafy greens, and fresh vegetable food safety.

For more information contact an advisor:

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CORE COURSES

General Education Requirements	Course	27-35 Units
Foreign language	Various	0-8
First Year Composition 1	ENGL 101	3
First Year Composition 2	ENGL 102	3
General Education, Tier 1	TRAD 1	3
General Education, Tier 1	TRAD 2	3
General Education, Tier 1	INDV 1	3
General Education, Tier 1	INDV 2	3
General Education, Tier 2	Humanities	3
General Education, Tier 2	Individuals & Societies	3
General Education, Tier 2	Arts	3
<i>*Diversity Emphasis</i>		
General Science Core	Course	20-21 Units
Calculus	MATH 113	3
General Chemistry I Lecture and Laboratory	CHEM 151	4
General Chemistry II Lecture and Laboratory	CHEM 152	4
Lectures in Organic Chemistry	CHEM 241A	3
OR Environmental Soil and Water Chemistry	OR ENVS 462	
Quantitative Skills For Natural Sciences	ENVS 275	3-4
OR Introduction to Statistics and Data Analysis	OR AREC 239	
OR Introduction to Statistics and Biostatistics	OR MATH 263	
OR Intro to Statistical Methods	OR MATH 363	
Introductory Physics 1 Lecture	PHYS 102	3
Plant, Soil and Water Science Core	Course	30 Units
Plant Biology	PLS 240	4
Applied Plant Physiology	PLS 475A	3
OR Plant Growth and Physiology	OR PLS 360	
Animal and Plant Genetics	PLS 312	4
OR Genetics	OR ECOL 320	
Principles and Techniques of Plant Propagation and Culture	PLS 330	3
OR Yuma Production Systems (Yuma)	OR PLS 397A	
Introduction to Soil Science & Laboratory	ENVS 200/201	4
Soil Fertility & Plant Nutrition	ENVS 316	3
Soil Ecology of Sustainable Systems	ENVS 300	3
OR Irrigation Principles and Management (Yuma)	OR ASM 404	
Insect Pest Management	ENTO 468	3
OR Greenhouse Pest Mngmt: Methods & Practice	OR ENTO 497C	
OR Insect Pest Mngmt for Desert Cropping Systems	OR ENTO 300	
Introductory Plant Pathology	PLP 305	3
Career Preparation	Course	10 Units
Communication – Technical Writing	ENVS 408	3
OR Translating Environmental Science	OR ENVS 415	
OR Ag Communications	OR ALC 422	
Freshman Colloquium: How to Feed and Clothe 9 Billion	PLS 195A	1
OR Intro to Agricultural Systems Mnmgt (Yuma)	OR ASM 195A	
Experiential Learning	ASM, ENVS, PLS, or BE 392,	3
CALS Colloquium AND Senior Capstone	CALS 195C and PLS 498	3
OR Internship (Yuma)	OR ASM 499	
<i>Select a sub-plan</i>		<i>27 Units</i>

Agronomy subplan

Complete the following courses:		
Crop Science and Production	PLS 306	3
Environmental Physics	ENVS 420	3
OR Soil Physics	OR ENVS 470	
Plant Breeding	PLS415	3
OR Introduction to Biotechnology	OR PLS 340	
OR Plant Biotechnology	OR PLS 424R	
OR Plant Genetics and Genomics	OR PLS 449A	
Applied Weed Science	PLS 300	3
OR Noxious Invasive Plants of Arizona	OR RNR 400	
Sustainable Management of Arid Lands & Salt-Affected	ENVS 401	3
Selectives: Choose 12 units from the following list		
Agriculture, Environmental and Legal Issues	ACBS 411	3
Applications in Agricultural Mechanics	AGTM 350	3
Operations in Agricultural Mechanics	AGTM 351	3
Solar Photovoltaic Energy Systems with Applications to Ag.	AGTM200	3
Natural Resource Management in Native Communities	AIS 441A	3
Precision Observation with Drones	BE 385	3
Foundations in Biochemistry	BIOC 384	3
Agro-ecology	ENTO 436	3
Living in Symbiosis	ENTO 310	3
Environmental Chemistry	ENVS 340	3
Environmental Soil and Water Chemistry	ENVS 462*	3
Microbial Biogeochemistry and Global Change	ENVS 410	3
Soil Genesis and Classification	ENVS 431R	3
General Mycology	PLP 427R	3
Plant Cell Structure & Function	PLS 359	3
Plant Growth and Physiology	PLS 360*	3
General Virology	PLS 333	3
Applications of Geographic Information Systems	RNR 403	3
OR GIS for Natural and Social Sciences	OR RNR 417	
OR Geographic Applications of Remote Sensing	OR RNR 483	
OR Introduction to Remote Sensing	OR WSM 330	
<i>*Cannot be used for both core and elective</i>		

Urban Horticulture subplan

Complete the following courses:		
Plant Materials	LAR 420	4
Introduction to Horticulture	PLS 235	3
Arboriculture	PLS 303	2
Electives: Choose 18 units including 10 units of upper		
Agriculture, Environmental and Legal Issues	ACBS 411	3
Food Safety Laws and Legal Policies	ACBS 437	3
Aquaculture	ACBS 456	3
Solar Photovoltaic Energy Systems with Applications to	AGTM 200	3
Turf and Landscape Technology	AGTM 330	3
Introduction to Hydroponics	BE 217	3
Lab: Introduction to Hydroponics	BE 217L	1
Introduction to Computer Aided Design	BE 221	3
Aquaponics Design	BE 334	3
Advanced Hydroponic Crop Production	BE 350	3
Advanced Hydroponic Crop Production Laboratory	BE 350L	1
Irrigation Systems Design	BE 456	3
Applied Instrumentation for Controlled Environment Ag.	BE 479	3
Controlled Environment Systems	BE 483	3
Foundations in Biochemistry	BIOC 384	3
Plants of the Desert	ECOL 414	2
Living in Symbiosis	ENTO 310	3
Agro-ecology	ENTO 436	3
Sustainable Mngmt of Arid Lands & Salt-Affected Soils	ENVS 401	3
Green Infrastructure	ENVS 450	3
Water Harvesting	ENVS 454	3
Parks and Urban Public Spaces	LAR 350	3
Landscape Ecology	LAR 423	3
Planning for Urban Resilience	PLG 408	3
General Mycology	PLP 427R	3
Arboriculture	PLS 303	3
Applied Weed Science	PLS 300	3
Crop Science and Production	PLS 306	3
General Virology	PLS 333	3
Introduction to Biotechnology	PLS 340	3
Plant Cell Structure and Function	PLS 359	3
Plant Growth and Physiology	PLS 360	3
Plant Breeding	PLS 415	3
Plant Biotechnology Laboratory	PLS 424L	2
Plant Biotechnology	PLS 424R	3

Urban Horticulture Electives Continued...		
Plant Genetics and Genomics	PLS 449A	3
Topics in Biotechnology	PLS 456	3
Medicinal Plants	PLS 480	3
Community and School Garden Workshop	PLS 497F	2 - 6
Agave, Cacti, and Other Succulents of Southern Arizona	RNR 310	3
Noxious Invasive Plants of Arizona	RNR 400	3
Applications of Geographic Information Systems	RNR 403	3
GIS for Natural and Social Sciences	RNR 417	3
Sustainable Design and Planning	SBE 201	3

Controlled Environment Agriculture subplan

Complete the following courses		
Essential Computing for the Sciences	CSC 250	3
Intro to Biosystems Analytics	BE 310	3
Introduction to Horticulture	PLS 235	3
Introduction to Hydroponics (Lecture)	BE 217R	3
Introduction to Hydroponics (Lab)	BE 217L	1
Advanced Hydroponic Crop	BE 350R	3
Advanced Hydroponic Crop	BE 350L	1
Applied Instrumentation for CEA	BE 479	3
Controlled Environment Systems	BE 483	3
Aquaponics	BE 334 OR BE 444	3
Experiential Work	BE 391, 392, 393, 394, 399, 491, 492, 493, 494, or 499	1

(YUMA ONLY) Fresh Produce Safety subplan

Complete the following courses:		
Fresh Produce Safety	PLS 467	3
Fundamentals of Food Science &	NSC 353	3
Food Microbiology and Biotechnology	MIC 430	3
Crop Production	PLS 306	3
Quantitative Business Analysis	ASM311	3
Selectives: Choose 12 units from the		
Advanced Ag Systems/Tech	ASM 409	3
Case studies in Agriculture	ASM490	3
Agriculture Law	AGTM 375	3
Plant Cell Structure & Function	PLS 359	3
Plant Growth & Physiology	PLS 360	3
Community & school gardens	PLS497	3
Citrus Production	PLS 403	3
Applied Weed Science	PLS 300	3