

Department of

Applied Plant Science



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Department Description

The Department of Applied Plant Science emphasizes the relationship between the art and science of plant culture. This relationship affects production on thousands of acres as well as on a smaller, more urban scale in residential gardens and in the ornamental use of plants where art is specifically emphasized. In all these areas, plants are an integral part of the human experience. The emphasis on both production and aesthetics in the department's degrees and programs has prophetic roots:

"There is a great work for the Saints to do. Progress, and improve upon and make beautiful everything around you. Cultivate the earth, and cultivate your minds. Build cities, adorn your habitations, make gardens, orchards, and vineyards, and render the earth so pleasant that when you look upon your labors you may do so with pleasure, and that angels may delight to come and visit your beautiful locations." Brigham Young, Deseret News, Aug. 8, 1860, 177.

Students in these programs apply scientific knowledge to practical, hands-on experience in the Thomas E Ricks Gardens and Greenhouses, the Hill View Farm, the Plant Shop, the Ag Shop (Ag Engineering Building), and The Flower Center. They also provide produce and ornamentation for the BYU Idaho campus, events, community and local farmers markets. The department focuses on learning how plants grow, how to propagate them, and how to prepare them for consumer use. From basic plant science, to artistic embellishments for life events, this department offers a buffet of opportunities to improve the quality of life.

The Horticulture Program is a nationally recognized and accredited leader in horticulture education preparing students for expanding career opportunities in nurseries, garden centers, florist shops, floral wholesalers, plant brokers, landscape contractors, lawn service companies, interior plant companies, greenhouses, golf courses, parks, botanical gardens, landscape management, event planning, design build, plant production, plant breeding, horticulture sales and marketing, and horticulture supply companies.

The Agronomy, Crop, Soil Science Program provides excellent connections with local and international Agricultural companies doing research through the farm on campus, as well as coordinating internship and employment opportunities throughout their network in the industry. Employment opportunities for students with a background in Agriculture are excellent. Examples of career opportunities available are specialists in crop consulting, plant genetics, soil and water, environmental science, GPS/GIS, machinery management, agronomy, education, food processing, plant nutrition, food safety, range resource management, government agency workers and researchers. Internships are an integral component of the various programs in the Applied Plant Science Department. They are a doorway to the industry, and provide students with practical exposure to real world applications of plant studies.

The Agriculture Technology Program prepares students for a career in the technical and mechanical world of agriculture. Rapid mechanization of the industry over the past two generations has made shop work a larger and more essential part of agriculture operations. Students will attain skills needed to diagnose, repair, maintain all equipment related to agriculture systems. In addition, learning the technology of global positioning systems and geographical information systems will prepare technicians in all aspects of equipment operation and maintenance.

Students who seek advanced degrees find opportunities in education, research, extension, and government service. Several graduates of this department have gone on to advanced degrees in Landscape Architecture, Agriculture Engineering, Agronomy, and other industry certification. Students who like plants, have a desire to improve the world around them, and enjoy applying the law of the harvest will benefit from their time in the programs of Applied Plant Science. From seed to bouquet, from farm to table, the principles of the plant's potential are the core of this Department.

AAS in Plant Science and Technology (365)

Take required Foundation courses (17 credits)

Major Requirements

No Double Counting of Major Courses - No Grade Less Than C- in Major Courses

CORE COURSES	SUPPLEMENTAL COURSES	<i>cont. from previous column</i>	<i>cont. from previous column</i>	<i>Program Notes:</i>
<i>Take these courses:</i>	<i>Take 29 credits:</i>			
APS 122 4	AGRON 445 2	AGRON 445 2	AGTEC 360 4	
APS 220 3	AGRON 455 3	AGRON 455 3	AGTEC 474 3	
APS 220L 1	AGBUS 210 3	AGRON 460 3	AGTEC 486 3	
AGTEC 220 3	AGBUS 347 3	AGRON 470 3	APS 299R .5	
AGTEC 286 3	AGRON 310 3	AGTEC 122 2	APS 339R 1	
<u>3</u>	AGRON 321 4	AGTEC 124 2	APS 412 2	
14	AGRON 325 3	AGTEC 132 2	APS 413 1	
	AGRON 330 3	AGTEC 186 1	APS 465 3	
	AGRON 350 3	AGTEC 230 2	WELD 101 <u>3</u>	
	AGRON 397 2	AGTEC 294 3	29	
	AGRON 425 3	AGTEC 301 4		
	AGRON 435 3	AGTEC 320 3		
	AGRON 440 3	AGTEC 335 4		
	<i>cont. in next column</i>	<i>cont. in next column</i>		

Total Major Credits=43

This major is available on the following tracks:

Fall-Winter---- YES

Winter-Spring---- YES

Spring-Fall---- YES

AAS in Horticulture (372)

Take required Foundations courses (17 credits)

Major Requirements

No Double Counting of Major Courses

CORE COURSES	SEMINAR	ELECTIVE COURSES	<i>cont. from previous column</i>	<i>Program Notes:</i>
<i>Take these courses:</i>	<i>Repeat 2 times:</i>	<i>Take 15 credits:</i>		
APS 122 4	APS 299R <u>0.5</u>	AGBUS 232 3	HORT 338R 3	
APS 220 3	1	AGTEC 220 3	HORT 340 2	
APS 220L 1		APS 339R 1	HORT 351 2	
APS 412 2	INTERNSHIP	APS 413 1	HORT 410 3	
HORT 230 3	<i>Take this course for 1 credit:</i>	HORT 252 4	HORT 420 3	
HORT 297R 1	APS 298R <u>1.5</u>	HORT 311 2	HORT 430 3	
HORT 319 3	1	HORT 325 2	HORT 455 2	
HORT 320 3		HORT 329 2	HORT 460 2	
HORT 321 2		HORT 334 3	HORT 461 2	
HORT 322 2		HORT 335 3	HORT 470 <u>2</u>	
HORT 324 <u>2</u>		<i>cont. in next column</i>	15	
26				

Total Major Credits=43

This major is available on the following tracks:

Fall-Winter---- YES

Winter-Spring---- YES

Spring-Fall---- YES

AAS in Floral Design (373)

Take required Foundations courses (17 credits)

Major Requirements

No Double Counting of Major Courses

CORE COURSES	SEMINAR	ELECTIVE COURSES	Cont. from previous column:	Program Notes:
<i>Take these courses:</i>	<i>Repeat 2 times:</i>	<i>Take 16 credits:</i>	B 275	
APS 122 4	APS 299R 0.5	AGBUS 232 3	B 283 3	
APS 339R 1	1	APS 220 3	CA 131 3	
HORT 230 3		APS 220L 1	HFED 110 2	
HORT 287R 1	INTERNSHIP	APS 290R 1-3	HFED 140 3	
HORT 297R 1	<i>Take this course for 1 credit:</i>	APS 339R 1	HORT 230 3	
HORT 324 2	APS 298R 1-5	APS 412 2	HORT 287R 1	
HORT 325 2	1	APS 413 1	HORT 334 3	
HORT 335 3		ART 101 3	HORT 338R 3	
HORT 336 2		AUTO 100 1	HORT 460 2	
HORT 338R 3		AUTO 125 1	SPAN 101 4	
HORT 435 3		AUTO 126 1	16	
25		<i>Cont. next column</i>		

Total Major Credits=43

This major is available on the following tracks:

Fall-Winter---- YES

Winter-Spring---- YES

Spring-Fall---- YES

BS in Agronomy, Crop and Soil Sciences (642)

Take required Foundation courses

Major Requirements

No Double Counting of Major Courses - No Grade Less Than C- in Major Courses

CORE COURSES	Take these courses:	AGRONOMY COURSES	Cont. from previous column	Program Notes:
<i>Take these courses during your first 2 semesters:</i>	<i>Take these courses:</i>	<i>Take 23 credits:</i>	APS 412 2	
APS 122 4	AGRON 321 4	AGRON 330 3	APS 413 1	
APS 220 3	AGRON 325 3	AGRON 350 3	APS 465 3	
APS 220L 1	AGRON 397 2	AGRON 425 3	BIO 331 3	
APS 300R 1	AGRON 470 3	AGRON 430 3	23	
APS 398R 1-5	AGTEC 286 3	AGRON 435 3		
CHEM 101 3	15	AGRON 440 3	<i>Take 3 credits:</i>	
13		AGRON 445 2	AGTEC 186 1	
		AGRON 455 3	AGTEC 220 3	
		AGRON 460 3	AGTEC 320 3	
		<i>Cont. next column</i>	AGTEC 486 3	
			3	

Total Major Credits=54

Additional Elective Credits Required for Graduation=26

This major is available on the following tracks:

Fall-Winter---- YES

Winter-Spring---- YES

Spring-Fall---- YES

BS in Agriculture Technology (644)

Take required Foundation courses

Major Requirements

No Double Counting of Major Courses - No Grade Less Than C- in Major Courses

CORE COURSES		AG TECHNOLOGY COURSES		SUPPLEMENTAL COURSES		Program Notes:
<i>Take these courses during your first 2 semesters:</i>		<i>Take 8 credits:</i>		<i>Take 15 credits:</i>		
AGRON 122	3	AGED 460	2	AGBUS 210	3	
AGTEC 220	3	AGTEC 286	3	AGBUS 347	3	
	6	AGTEC 335	4	AGRON 330	3	
		AGTEC 360	4	AGTEC 124	2	
<i>Take these courses:</i>		AGTEC 474	3	AGTEC 125	3	
AGTEC 186	1	APS 398R	1-5	AGTEC 486	3	
AGTEC 320	3	WELD 101	3	B 220	3	
	4		20	B 370	3	
		SEMINAR		CONST 230	3	
		<i>Repeat 2 times:</i>		CONST 240	3	
		APS 299R	.5	CONST 250	3	
			1	ME 231	3	
					15	

Total Major Credits=54

Additional Elective Credits Required for Graduation=26

This major is available on the following tracks:

Fall-Winter---- YES

Winter-Spring---- YES

Spring-Fall---- YES

BS in Horticulture

Design/Build/Maintain Emphasis (695-14)

Take required Foundations courses

Major Requirements

No Double Counting of Major Courses

CORE COURSES		SEMINAR		EMPHASIS COURSES		ELECTIVE COURSES		Program Notes:
<i>Take these course:</i>		<i>Repeat 2 times:</i>		<i>Take these courses:</i>		<i>Take 4 credits:</i>		
APS 122	4	APS 299R	.5	HORT 252	4	AGBUS 232	3	
APS 220	3		1	HORT 319	3	AGTEC 220	3	
APS 220L	1	INTERNSHIP		HORT 321	2	APS 290R	1-3	
APS 339R	1	<i>Take this course for 1 credit:</i>		HORT 329	2	APS 339R	1	
APS 412	2	APS 298R	1-5	HORT 340	2	APS 413	1	
HORT 230	3		1	HORT 351	2	ENG 316	3	
HORT 297R	1			HORT 410	3	HORT 311	2	
HORT 320	3			HORT 430	3	HORT 325	2	
HORT 322	2			HORT 453	3	HORT 334	3	
HORT 324	2				24	HORT 336	2	
HORT 335	3					HORT 338R	3	
	25					HORT 350R	1	
						HORT 420	3	
						HORT 455	2	
						HORT 460	2	
						HORT 461	2	
						HORT 470	2	
							4	

Total Major Credits=55

Additional Elective Credits Required for Graduation - 25

This major is available on the following tracks:

Fall-Winter---- YES

Winter-Spring---- YES

Spring-Fall---- YES

BS in Horticulture
Production Emphasis (695-15)

Take required Foundations courses

Major Requirements

No Double Counting of Major Courses

CORE COURSES	SEMINAR	EMPHASIS COURSES	ELECTIVE COURSES	Program Notes:
<i>Take these courses:</i>	<i>Repeat 2 times:</i>	<i>Take these courses:</i>	<i>Take 6 credits:</i>	
APS 122 4	APS 299R 0.5	AGBUS 232 3	AGTEC 220 3	
APS 220 3	1	HORT 321 2	APS 290R 1-3	
APS 220L 1		HORT 325 2	APS 339R 1	
APS 339R 1	INTERNSHIP	HORT 334 3	APS 413 1	
APS 412 2	<i>Take this course for 1 credit:</i>	HORT 375 1	HORT 252 4	
HORT 230 3	APS 298R 1-5	HORT 420 3	HORT 311 2	
HORT 297R 1	1	HORT 455 2	HORT 319 3	
HORT 320 3		HORT 460 2	HORT 329 2	
HORT 322 2		HORT 461 2	HORT 336 2	
HORT 324 2		HORT 470 2	HORT 338R 3	
HORT 335 3		22	HORT 340 2	
25			HORT 350R 1	
			HORT 351 2	
			HORT 410 3	
			HORT 430 3	
			HORT 453 3	
			6	

Total Major Credits=55

Additional Elective Credits Required for Graduation - 25

This major is available on the following tracks:

Fall-Winter---- YES

Winter-Spring---- YES

Spring-Fall---- YES

BS in Horticulture
Floral Design Emphasis (695-16)

Take required Foundations courses

Major Requirements

No Double Counting of Major Courses

CORE COURSES	SEMINAR	ELECTIVE COURSES	Cont. from previous column	Program Notes:
<i>Take these courses:</i>	<i>Repeat 2 times:</i>	<i>Take 10 credits:</i>	HORT 410 3	
APS 122 4	APS 299R 0.5	AGBUS 232 3	HORT 420 3	
APS 220 3	1	AGTEC 220 3	HORT 430 3	
APS 220L 1		APS 290R 1-3	HORT 453 3	
APS 339R 1	INTERNSHIP	APS 339R 1	HORT 455 2	
APS 412 2	<i>Take this course for 1 credit:</i>	APS 413 1	HORT 461 2	
HORT 230 3	APS 298R 1-5	AUTO 100 1	HORT 470 2	
HORT 297R 1	1	AUTO 125 1	WELD 101 3	
HORT 320 3		AUTO 126 1	10	
HORT 322 2	EMPHASIS COURSES	HFED 110 2		
HORT 324 2	<i>Take these courses:</i>	HFED 140 3	SPECIAL PROBLEMS	
HORT 335 3	APS 339R 1	HORT 252 4	<i>Take this course for 1 credit:</i>	
25	HORT 325 2	HORT 287R 1	APS 290R 1-3	
	HORT 336 2	HORT 311 2	1	
	HORT 338R 3	HORT 319 3		
	HORT 435 3	HORT 321 2	FLORAL COURSES	
	HORT 436 1	HORT 329 2	<i>Repeat this course 2 times:</i>	
	HORT 437 1	HORT 334 3	HORT 287R 1	
	HORT 460 2	HORT 338R 3	2	
	15	HORT 340 2		
		HORT 351 2		
		15		
		<i>Cont. next column</i>		

Total Major Credits=55

Additional Elective Credits Required for Graduation - 25

This major is available on the following tracks:

Fall-Winter---- YES

Winter-Spring---- YES

Spring-Fall---- YES

BS in Agriculture Education Composite (825)

Take required Foundation courses

Major Requirements

No Double Counting of Major Courses - No Grade Less Than C- in Major Courses

EDUCATION CORE	CORE COURSES	TECHNOLOGY COURSES	ANIMAL SCIENCE COURSES	Program Notes:
<i>Take these courses:</i>	<i>Take 1 course:</i>	<i>Take 4 credits:</i>	<i>Take 1 course:</i>	
ED 200 2	ACCTG 180 3	AGTEC 124 2	AS 340 4	
ED 304 3	AGBUS 201 3	AGTEC 220 3	AS 360 4	
ED 461 3		AGTEC 335 4	AS 370 4	
ED 492 10	<i>Take these courses:</i>	AGTEC 360 4		
SPED 360 2	AGBUS 210 3			
<u> 20</u>	AGBUS 347 3			
	AGED 297 2			
	AGED 380 3			
	AGED 450 2			
	AGED 452 3			
	AGED 460 2			
	APS 122 4			
	APS 220 3			
	APS 220L 1			
	AGTEC 122 2			
	AGTEC 286 3			
	AS 150 3			
	AS 220 3			
	AS 336 3			
	HORT 320 3			
	HORT 334 3			
	WELD 101 3			
	<u> 49</u>			

Total Major Credits=60

Education Core Credits=20

This major is available on the following tracks:

Fall-Winter---- YES

Winter-Spring---- YES

Spring-Fall---- NO

Minor in Horticulture (204)

Minor Requirements

CORE COURSES	ELECTIVE COURSES	Cont. from previous column	Program Notes:
<i>Take this course:</i>	<i>Take 19 credits:</i>		<i>No double counting of minor courses.</i>
APS 122 4	APS 299R 5	HORT 334 3	
	APS 339R 1	HORT 335 3	
	APS 412 2	HORT 336 2	
<i>Take 1 course:</i>	APS 413 1	HORT 338R 3	
HORT 230 3	HORT 230 3	HORT 340 2	
HORT 335 3	HORT 252 4	HORT 410 3	
<u> 3</u>	HORT 287R 1	HORT 420 3	
	HORT 311 2	HORT 430 3	
	HORT 319 3	HORT 435 3	
	HORT 320 3	HORT 455 2	
	HORT 321 2	HORT 460 2	
	HORT 322 2	HORT 461 2	
	HORT 324 2	HORT 470 2	
	HORT 325 2	<u> 19</u>	
	HORT 329 2		
	<i>Cont. next column</i>		

Total Minor Credits=26

This minor is available on the following tracks:

Fall-Winter---- YES

Winter-Spring---- YES

Spring-Fall---- YES

Geographical Information Systems (GIS) Technology Minor (222)

Minor Requirements

No Double Counting of Minor Courses

Core Courses <i>Take these courses:</i> CIT 111 3 MATH 221A, 221B or 221C 3 GEOG 140 1 GEOG 230 3 <hr style="width: 50%; margin-left: 0;"/> 10 Advanced/Applied Courses <i>Take 1 course:</i> AGTEC 286 3 GEOG 340 3 GEOG 340 3 <hr style="width: 50%; margin-left: 0;"/> 3	GIS Project <i>Take 1 course*:</i> AGTEC 486 3 GEOL 440R 3 <hr style="width: 50%; margin-left: 0;"/> 3 <i>*A directed studies or other project oriented class in a students chosen discipline may be substituted for this requirement with the Geography Chairs permission.</i>	Supplemental Courses <i>Take 2 courses:</i> AGRON 425 3 CIT 160 3 CIT 260 3 COMM 130 3 GEOG 240 3 <hr style="width: 50%; margin-left: 0;"/> 6	Program Notes:
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Total Major Credits=22

This major is available on the following tracks:

Fall-Winter---- YES

Winter-Spring---- YES

Spring-Fall---- YES

Minor in Plant Science and Technology (243)

Minor Requirements

No Double Counting of Minor Courses - No Grade Less Than C- for Minor Courses

CORE COURSES <i>Take these courses:</i> APS 122 4 APS 220 3 APS 220L 1 AGTEC 220 3 <hr style="width: 50%; margin-left: 0;"/> 11	SUPPLEMENTAL COURSES <i>Take 14 credits:</i> AGRON 310 3 AGRON 321 4 AGRON 330 3 AGRON 350 3 AGRON 425 3 AGRON 440 3 Cont. next column	<i>Cont. from previous column</i> AGRON 445 2 AGRON 460 3 AGTEC 132 2 AGTEC 186 1 AGTEC 230 2 AGTEC 294 3 AGTEC 301 4 Cont. next column	<i>Cont. from previous column</i> AGTEC 335 4 AGTEC 360 4 APS 465 3 <hr style="width: 50%; margin-left: 0;"/> 14	Program Notes:
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Total Minor Credits=25

This minor is available on the following tracks:

Fall-Winter---- YES

Winter-Spring---- YES

Spring-Fall---- YES

Applied Plant Science Pre-approved Clusters

Event Planning		1500
<i>Take 9 credits:</i>		
HORT 287R	Flower Center	1
HORT 325	Interiorscaping	2
HORT 335	Flower Arranging	3
HORT 338R	Wedding and Event Planning	3
<i>Take 1 course:</i>		
AGBUS 232	Ag Sales and Merchandising	3
B 283	Small Business Creation	3
B 383	Large Business Creation	3
COMM 339	Events Management	3
Total Credits		12

Horticulture		1501
<i>Take 12 credits:</i>		
APS 122	Introduction to Plant Science	4
APS 299R	Seminar (repeatable)	0.5
APS 412	Integrated Pest Management	2
APS 413	Pesticide Application	1
HORT 103	Home Gardening	3
HORT 230	Introduction to Architecture/Landscape Design	3
HORT 252	Landscape Construction	4
HORT 287R	Flower Center (repeatable)	1
HORT 311	Introduction to Arboriculture	2
HORT 319	Landscape Management	3
HORT 320	Plant Propagation	3
HORT 321	Deciduous Plant Identification	2
HORT 322	Evergreen Plant Identification	2
HORT 324	Flower Identification	2
HORT 325	Interiorscaping	2
HORT 329	Irrigation	2
HORT 334	Greenhouse Operations	3
HORT 335	Flower Arranging	3
HORT 336	Cultural Design Influence	2
HORT 338R	Wedding and Event Planning	3
HORT 340	Landscape Computer Operations	2
HORT 410	Turfgrass Management	3
HORT 420	Advanced Propagation	3
HORT 430	Advanced Landscape Design	3
HORT 455	Nursery Management	2
HORT 460	Cut Flower Crops	2
HORT 461	Potted Plants	2
HORT 470	Landscaping with Fruit and Vegetables	2
Total Credits		12

Natural Resources		1502
<i>Take 4 courses:</i>		
BIO 225	Range Management	3
BIO 302	Ecology	4
BIO 325	Range Ecology Systems Management	3
BIO 455	Rangeland Inventory & Analysis Lab	3
BIO 466	Rangeland Vegetation Manipulation & Improvement	3
Total Credits		12

Soil Management		1503
<i>Take these courses:</i>		
APS 220	Introduction to Soils	3
AGRON 321	Soil Fertility and Plant Nutrition	4
AGRON 325	Irrigation and Drainage	3
AGRON 425	Soil Management	3
Total Credits		13

Crop Production		1504
<i>Take these courses:</i>		
HORT 103	Home Gardening	3
AGRON 330	Forage Crops	3
AGRON 435	Potato Science	3
AGRON 455	Cereal Crops	3
Total Credits		12

Crop Protection		1505
<i>Take these courses:</i>		
AGRON 321	Soil Fertility and Plant Nutrition	4
AGRON 325	Irrigation and Drainage	3
AGRON 445	Crop Advisor Certification	2
APS 412	Integrated Pest Management	2
APS 413	Crop Protection	1
Total Credits		12

GIS in Agriculture and Natural Resources		1506
<i>Take these courses:</i>		
AGTEC 286	Introduction to GIS	3
AGTEC 474	Mechanical Systems Analysis	3
AGTEC 486	Advanced GIS in Agriculture and Natural Resources	3
<i>Take 1 course:</i>		
CIT 225	Database Design and Development	3
GEOG 240	Maps and Remote Sensing	3
GEOG 340	Advanced GIS and Spatial Analysis	3
Total Credits		12

Agriculture Technology		1507
<i>Take these courses:</i>		
AGTEC 320	Agricultural Machinery	3
AGTEC 335	Electronic Systems Diagnostics and Repairs	4
AGTEC 360	Agricultural Hydraulics	4
AGTEC 474	Mechanical Systems Analysis	3
Total Credits		14

GIS		6801
<i>Take this course:</i>		
GEOL 140	Introduction to GPS	1
<i>Take 1 course:</i>		
AGTEC 286	Introduction to GIS	3
GEOG 230	Introduction to GIS	3

<i>Take 1 course:</i>		
MATH 221A	Business Statistics	3
MATH 221B	Biostatistics	3
MATH 221C	Social Studies Statistics	3

<i>Take 1 course:</i>		
AGTEC 486	Advanced GIS in Agriculture and Natural Resources	3
GEOG 340	Advanced GIS and Spatial Analysis	3
GEOL 340	Introduction to GIS for Geoscientists	3

<i>Take 1 course:</i>		
CIT 111	Introduction to Databases	3
CIT 160	Introduction to Programming	3
COMM 130	Visual Media	3
Total Credits		13

Some courses may have a prerequisite that must be met in order to take that course.

Course Descriptions

Credits*

AGED 297 Ag Education Practicum	(2:1:2)
The purpose of this course is to allow those students interested in teaching high school agriculture to gain an early field experience. Students will be required to spend at least 40 hours in the semester observing and participating in lecture and laboratory activities. (Winter, Fall)	
AGED 380 Connecting Education and Employment	(3:3:0)
Prepares future Agricultural educators to teach school and career options to secondary students who desire a career in agriculture or related field of endeavor. (Spring, Fall)	
AGED 450 Curriculum Development/Assessment in Occupational Education	(2:2:0)
This course will help students develop an understanding of the basic techniques of identifying and selecting instructional materials and methods to effectively teach agriculture at the secondary level. This course mainly focuses on course construction in professional-technical curriculum development in agriculture and its related fields. (Winter, Fall)	
AGED 452 Methods of Teaching Agriculture	(3:3:0)
Competence in teaching methods, along with competence in the technical subject matter is essential to be effective as a teacher of agriculture. (Winter, Fall)	
AGED 460 Experiential Laboratory Methods	(2:1:2)
This course is to help students develop specific skill sets in agricultural curriculum laboratory exercises. The course will focus on the experiential method of teaching and developing skills that can be transferred to secondary students relative to agricultural course work. (Spring, Fall)	
AGRON 310 Tree Fruit and Vegetable Management	(3:3:1)
Shows the importance of fruit and vegetable crops in U.S. agriculture, and their contribution to the national economy and the human diet. (Spring, Fall)	
AGRON 321 Soil Fertility and Plant Nutrition	(4:3:2)
Prerequisites: AGRON 122 or AGRON 220 Field identification and measurement of plant nutrient deficiencies, petiole analysis and crop fertilization methods. (Winter, Spring)	
AGRON 325 Irrigation and Drainage	(3:3:0)
Course Fees: \$25.00 Principles and application of soil, water and plant relations, agricultural meteorology, and irrigation. (Spring, Fall)	
AGRON 330 Forage Crops	(3:3:0)
Course Fees: \$25.00 A composite study of an important field of agronomy, forage crops used in the livestock industry. Applied production principles and management requirements will be emphasized for each crop. History and biology of major crops. (Spring, Fall)	
AGRON 350 Plant Breeding and Genetics	(3:2:2)
Prerequisites: APS 122, APS 220, APS 220L, and CHEM 101 or higher A study of plant biotechnology and the role it plays in our everyday lives from the foods we eat, to the jobs we work at, to the diseases we suffer from. This course will not only teach the science content that is necessary to work in a biotechnology lab, but will develop the critical thinking skills that are necessary to keep up with the rapidly advancing scientific knowledge. (Winter)	
AGRON 397 Agriculture Research Practicum	(2:2:0)
The practicum provides students with opportunities to participate in undergraduate research through classroom discussion and supervised practical experience. The course will provide for the development and improvement of critical thinking and problem solving skills through the application of research methodologies. (Fall)	

AGRON 425 Soil Management	(3:3:1)
Examine the science and application of soil taxonomy, genesis, chemistry physics and microbiology to better manage soils for improving environmental quality and agricultural suitability. (Winter, Spring, Fall)	
AGRON 430 Soil Taxonomy and Genesis	(3:2:2)
Prerequisites: APS 220, APS 220L, and CHEM 101 or higher The study of soil genesis, classification, and mapping examines the evolution of soils, their organization into natural units, and their distribution throughout the world. Physical, chemical, and morphological soil characteristics are studied both in the field and classroom and then used to classify soils. (Spring, Fall)	
AGRON 435 Potato Science	(3:3:1)
Course Fees: \$25.00 The study of potato production including seed, water, fertilizer, and harvest management. The course includes lectures, field study and outside the classroom experiences to enable the student to become more knowledgeable of potato management. (Winter)	
AGRON 440 Crop Physiology	(3:3:1)
Prerequisites: CHEM 101 or higher; and either AGRON 122 or BIO 100 The science and application of crop science and physiology. Apply cellular and biochemical analysis of plant physiology to the more applied aspects of plant growth specifically agricultural crops. (Winter, Fall)	
AGRON 445 Crop Advisor Certification	(2:2:0)
This course is a capstone class for all Agronomy majors. The international Certified Crop Advisor program is designed to provide qualified credentials to professionals in Agriculture who consult and make nutrient and pesticide recommendations to Grower/Producers. Completion of the course prepares students to take two required examinations for CCA certification. (Winter, Spring)	
AGRON 455 Cereal Crops	(3:3:0)
Course Fees: \$25.00 Crop history and biology of major cereal crops. Class will cover both warm and cool season cereal crops. Introduction of principles involved in cereal chemistry, development and processing. (Winter, Spring)	
AGRON 460 Plant Pathology	(3:2:2)
This course will help plant growers to understand the potential for plant disease, to recognize symptoms of disease, understand the life cycle of the pathogen, and find a way to control, minimize or eliminate it. (Spring)	
AGRON 470 Agronomy Capstone: Agro-Ecology	(3:3:0)
Course \$25.00 Capstone course for agronomy, crop and soil science majors. The course is a study of sustainable agriculture including modern agricultural impacts on natural ecosystems. The application of modern agricultural technology to improve agriculture and economical sustain ability. (Winter, Fall)	
AGTEC 122 Small Engines	(2:1:2)
Course Fees: \$10.00 Selection, adjustment, and care of small engines. Small engine theory and procedures for complete small engine overhaul. (Winter, Spring, Fall)	
AGTEC 124 Compact Equipment	(2:1:2)
Total Course Fees: \$10 .00 Test and repair procedures for engines, electrical, power trains, and hydraulics found on compact equipment. (Winter, Spring, Fall)	
AGTEC 125 Agricultural Maintenance Welding	(3:2:2)
An overview in the use of electric arc and oxy acetylene welding equipment with an emphasis upon maintenance welding as it pertains to farm and ranch applications. (Winter)	

AGTEC 132 Climate Control	(2:1:3)
System theory, diagnosis, and repair of air conditioning and heating systems in agricultural equipment. (Winter)	
AGTEC 186 GPS Applications in Agriculture	(1:0:2)
This course will examine the technology and application of global positioning systems (GPS) in agriculture. (Spring, Fall)	
AGTEC 220 Preventive Maintenance and Machine	(3:2:3)
Course Fees: \$10.00 An overview of preventive maintenance, care and operation of Agricultural equipment. (Spring, Fall)	
AGTEC 230 Agriculture Electrification - AC	(2:1:3)
Principles, systems and applications of electrical energy in agriculture. (Winter)	
AGTEC 286 Introduction to Geography Information Systems	(3:2:2)
This course is designed to teach the basics of geographical information systems in agriculture and natural resources and how global positioning systems and geographical information systems can be used to improve agricultural and natural resource management. (Spring, Fall)	
AGTEC 290 Individual Study	(2:2:0)
Independent study, special assignment and/or advanced inquiry in an area of special interest, approved after consultation with instructor in charge. (Winter, Spring, Fall)	
AGTEC 294 Agriculture Fabrication	(3:2:2)
Prerequisite: ME 105 Rapid mechanization of agriculture over the past generation has made shop work a larger and more essential part of agriculture operations. This course will help develop specific skills used in agriculture mechanics and improve the ability to perform at high productive levels. (Winter)	
AGTEC 301 Engine Repair	(4:3:2)
Practical application and use of the principles and practices of major diesel engine repair. The mechanics and operational procedures and repair of tractors and other forms of farm power units with emphasis on adjustments, operations, and care of the power unit. (Winter)	
AGTEC 320 Agricultural Machinery	(3:2:2)
Course Fees: \$10.00 Selection, servicing, maintenance, operation, testing, repair, use and general management of agricultural equipment. (Winter, Fall)	
AGTEC 335 Electronic System Diagnostic Repair	(4:3:3)
Basic electricity in farm power electrical circuits, with emphasis in starting systems, charging systems, lighting systems and accessory systems. Advanced electronics used in farm power; fuel injection systems, monitors and controllers. (Winter, Fall)	
AGTEC 360 Agricultural Hydraulics	(4:3:3)
A study of fundamental and advanced principles governing and regulating the transmission and control of fluid power hydraulics. Trouble shooting and system repairs. (Winter, Fall)	
AGTEC 465 Machinery Management	(3:3:0)
A study of machinery efficiency, matching machines, and horsepower. Analysing and estimating costs associated with keeping machines running.	
AGTEC 474 Mechanical Systems Analysis	(3:2:3)
Prerequisites: AGTEC 220 and AGTEC 335 Testing and diagnosis for various pieces of equipment related to agriculture systems pertaining to the production of food. (Spring, Fall)	

AGTEC 486 Advanced GIS in Agriculture and Natural Resources	(3:2:2)
Prerequisite: AGTEC 286 This course is designed to apply geographical information systems (GIS) to agriculture and natural resource disciplines. The course will focus on collecting, analyzing, interpolating, and decision making using GIS software and GPS equipment. (Winter, Fall)	
APS 100 Orientation to APS	(0.5:2:0)
A survey of career opportunities and skills needed in the horticulture industry. Emphasis is placed on gaining familiarity with the BYU-Idaho campus and systems of learning at the university level. (Winter, Spring, Fall)	
APS 122 Introduction to Plant Science	(4:4:1)
Course Fees: \$125.00 The basic principles of structure, form, and function of plants in both the higher and lower plant kingdoms. (Winter, Spring, Fall)	
APS 220 Introduction to Soils	(3:3:0)
A basic course dealing with the formation of soils as well as the physical, chemical and biological properties of soils. (Winter, Spring, Fall)	
APS 220L Introduction to Soils Lab	(1:0:2)
Hands on experience determining soil texture, structure, color, measuring soil pH, nitrates, and fertilizers. (Winter, Spring, Fall)	
APS 290R Special Problems	(1-3:0:0)
Repeatable Course: may earn maximum of 8 credits The student may pursue a subject of interest through independent study under personal direction of a faculty specialist. (Winter, Spring, Fall)	
APS 298R Internship	(1-5:0:0)
Repeatable Course: may earn maximum of 5 credits Work experience in the plant science industry. (Winter, Spring, Fall)	
APS 299R Seminar	(0.5:2:0)
Repeatable Course: may earn maximum of 2.5 credits Guest lectures from industry leaders. (Winter, Spring, Fall)	
APS 300R Seminar	(1:0:0)
Repeatable Course: may earn maximum of 4 credits Total Course Fees: \$25.00 This class will help ensure students they are on track for graduation with a review of student grad reports and internship experiences. (Winter, Spring, Fall)	
APS 339R APS Portfolio	(1:2:2)
Course Fees: \$30.00 Repeatable Course: may earn maximum of 8 credits Portfolio is a course to help students develop a personal portfolio of the skills acquired during their studies at BYU-Idaho in preparation for employment or additional graduate school study. Students are taught to document their learning with digital photography web design, letters of introduction, presentation of résumé and personal vitae. (Winter, Spring, Fall)	
APS 398R Internship	(1-5:0:0)
Repeatable Course: may earn maximum of 5 credits Work experience in the plant science industry. (Winter, Spring, Fall)	
APS 412 Integrated Pest Management	(2:1:2)
Course Fees: \$20.00 Identification and control of insects, weeds and diseases of ornamental plants. The use, limitation and methods of applying pesticides including laws concerning their use. (Spring, Fall)	

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<p>APS 413 Pesticide Application (1:1:1) This course will examine crop protection through the use of pesticides cultural and biological control methods. (Spring, Fall)</p>	<p>HORT 319 Landscape Management (3:2:3) Course Fees: \$25.00 Prerequisite: HORT 201 Maintenance of trees, shrubs and turf in landscape, park, golf and athletic areas. (Spring, Fall)</p>
<p>APS 465 Integrated Weed Management (3:2:2) Prerequisites: APS 122, APS 220, and APS 220L This course is a study of weeds and their impact on agricultural production. The course will include instruction on weed physiology, identification, control practices, and ecological impacts. (Fall)</p>	<p>HORT 320 Plant Propagation (3:2:3) Course Fees: \$15.00 Prerequisites: HORT 201 or APS 122 Principles and practices used in commercial propagation of plants with emphasis on landscape nursery stock. Includes tissue culture, seed germination, grafting, layering, budding, cuttings and other specialized techniques. (Spring, Fall)</p>
<p>APS 498R Internship (1-5:0:0) Repeatable Course: may earn maximum of 5 credits (Winter, Spring, Fall)</p>	<p>HORT 321 Deciduous Plant Identification (2:1:2) Course Fees: \$10.00 Identification, landscape value and cultural requirements of deciduous trees, shrubs, and ground covers. (Spring, Fall)</p>
<p>HORT 103 Home Gardening (3:2:2) Fees: \$20.00 Learn basic principles, culture and production of vegetables, fruits, flowers, trees, shrubs, and turf, as it relates to the home garden and self-reliance. (For non-Hort majors only) This course includes a lecture and lab experience. (Spring, Fall)</p>	<p>HORT 322 Evergreen Plant Identification (2:1:2) Course Fees: \$410.00 Identification, landscape value, and special cultural requirements of evergreen trees, shrubs and ground covers. This course includes a lecture and lab experience. (Spring, Fall)</p>
<p>HORT 201 Plant Culture (3:2:3) Course Fees: \$105.00 Planting and establishment of horticultural plants in the landscape including lawns, trees, shrubs, vegetables, fruits and flowers. (Winter, Spring)</p>	<p>HORT 324 Flower Identification (2:1:2) Course Fees: \$10.00 Identification, landscape value, and special cultural requirements of annual and perennial flowers. (Spring, Fall)</p>
<p>HORT 230 Introduction to Architecture and Landscape Design (3:3:1) Course Fees: \$10.00 Enhances the student's understanding of the outdoor environment and how they can contribute to the quality of that environment through design and planning. Also a study of the history of landscape architecture and its effect on man. (Winter, Spring, Fall)</p>	<p>HORT 325 Interiorscaping (2:1:2) Course Fees: \$25.00 Identification of indoor plants and their culture. Principles of design as applied to the placement and use of plants. This course includes a lecture and lab experience. (Spring, Fall)</p>
<p>HORT 252 Landscape Construction (4:3:4) Course Fees: \$40.00 Prerequisite: HORT 230 A practical course of layout and construction techniques for landscape projects. Considered are masonry, wood structures, irrigation and plant installations. (Spring, Fall)</p>	<p>HORT 329 Irrigation (2:1:2) Course Fees: \$15.00 Prerequisite: HORT 230 Irrigation of turf and landscape plants. Design of irrigation and landscape lighting systems, with selection and assembly of components. (Winter)</p>
<p>HORT 287R Flower Center (1:0:2) Repeatable Course: may earn maximum of 8 credits Course Fees: \$20.00 Prerequisite: HORT 335 This course provides training and experience in presentation of flowers in: display windows and coolers, large banquet halls, auditoriums, custom design in residential and commercial settings. Florals skills, shop management techniques, and floral nomenclature are all emphasized. The class is provided as an opportunity to reinforce principles learned in the various floral classes, and to prepare students for internship and retail employment. (Winter, Spring, Fall)</p>	<p>HORT 334 Greenhouse Operations (3:2:3) Course Fees: \$15.00 Prerequisite: HORT 320 Greenhouse construction, environmental control, pest control and plant culture including production of greenhouse floral crops. (Spring, Fall)</p>
<p>HORT 288 Occupational Internship Preparation (0.5:2:0) Class preparation for work experience in the florist, landscape or nursery industry. (Winter, Spring, Fall)</p>	<p>HORT 335 Flower Arranging (3:3:1) Course Fees: \$95.00 Instruction and care in handling of flowers, historical and current application, identification and use. (Winter, Spring, Fall)</p>
<p>HORT 297R Practicum in Horticulture (1:1:1) Repeatable Course: may earn maximum of 3 credits Horticulture Majors. Supervised practical experience for the development and improvement of horticultural skills. Repeatable up to 2 times. (Winter, Spring, Fall)</p>	<p>HORT 336 Cultural Design Influence (2:1:2) Course Fees: \$25.00 This course helps students understand the theories of Asian design influence, with particular emphasis on the use of line. Principles of Asian design and their influence on modern American floral design. (Winter)</p>
<p>HORT 311 Introduction to Arboriculture (2:1:2) Course Fees: \$15.00 Establishment, culture and maintenance of trees and shrubs in the landscape. (Spring, Fall)</p>	<p>HORT 338R Wedding and Event Planning (3:2:2) Repeatable Course: may earn maximum of 3 credits Course Fees: \$75.00 Prerequisite: HORT 335 Theories, methods and materials involved in wedding and special occasion arrangements in preparation for the Spring Flower and Bridal Open House. To prepare floral majors for opportunities to plan and design floral products for weddings. (Winter)</p>

HORT 340 Landscape Computer Operations (2:1:2)

Course Fees: \$10.00

Prerequisite: HORT 230

Application of specific computer software programs that are commonly used in the horticulture industry; including sprinkler design, landscape design, bidding and estimating, GPS, and the internet.

(Winter)

HORT 350R ALCA Career Days (1:1:0)

Course Fees: \$1,000.00

Repeatable Course: may earn maximum of 3 credits

This course for students selected to participate in the yearly ALCA Career Days field excursion with the Horticulture Department. The course is designed to assist students with their preparations to communicate with potential employers during the career day events. Students also are given special attention in perfecting practical skills that they have been taught throughout their tenure at the University.

(Winter, Fall)

HORT 351 Landscape Contracting (2:1:2)

Course Fees: \$10.00

Prerequisite: HORT 230

Estimating, bidding, and contracting procedures for landscape construction, and maintenance projects. A hands-on approach to bidding and estimating jobs for the Green Industry.

(Winter)

HORT 375 Floriculture Applications (1:1:0)

Course Fees: \$1,000.00

Prerequisite: HORT 320

Case Studies of plant growth in relation to the floriculture industry with emphasis on the physiological interactions of plant growth resulting from fertilization, plant growth regulators, growing structures, irrigation and container media.

(Spring, Fall)

HORT 410 Turfgrass Management (3:2:3)

Course Fee: \$40.00

Prerequisite: HORT 320

Establishment, culture, and maintenance of turf grass and trees in the landscape.

(Spring, Fall)

HORT 420 Advanced Propagation (3:2:3)

Course Fees: \$40.00

Advanced study of the principles, techniques, and applications of plant propagation with emphasis on tissue culture and micropropagation.

(Winter, Fall)

HORT 430 Advanced Landscape Design (3:3:1)

Course Fees: \$10.00

Prerequisites: HORT 340 and either HORT 321 or HORT 322

Artistic and functional design of landscapes.

(Winter)

HORT 435 Advanced Floral Design (3:2:2)

Course Fees: \$700.00

Prerequisite: HORT 335

Professional floral design with emphasis on retail flower shop operation, products, and materials. Particular attention is given to developing speed, proficiency, and quality after students have completed a floral internship experience.

(Winter)

HORT 436 Competition Design and Comment (1:1:1)

Course Fees: \$30.00

Prerequisite: HORT 335

Developing freestyle and structured designs from various materials for competitive designing and judging.

(Winter)

HORT 437 Interpretive Design (1:1:1)

Course Fees: \$50.00

Prerequisite: HORT 335

Final evaluation of the student's ability to assess proper design interpretations, artistic dimensions of the student's preparation and training, fluency with the language of flowers, and product knowledge.

(Winter)

HORT 453 Land Construction Material (3:2:2)

Course Fees: \$10.00

Prerequisites: HORT 340 and either HORT 321 or HORT 322

A study of the construction and design use of typical landscape construction materials including pavers, concrete, wood, and rock.

(Winter)

HORT 455 Nursery Management (2:1:2)

Course Fees: \$200.00

Prerequisite: HORT 320

This course will focus on the development, organization, infrastructure, and operation of a production nursery. This will cover production principles and practices and strategies for wholesale and retail marketing of nursery crops. The laboratory will concentrate on the development of skills associated with the production and marketing of nursery crops.

(Winter)

HORT 460 Cut Flower Crops (2:1:2)

Prerequisite: HORT 320

Commercial production, harvesting, marketing and scheduling of cut flower and crops.

(Winter)

HORT 461 Potted Plants (2:1:2)

Course Fees: \$10.00

Prerequisite: HORT 320

Commercial production, harvesting, marketing, and scheduling of bedding plants and potted commercial crops.

(Winter)

HORT 470 Landscaping with Vegetables and Fruit (2:1:2)

Prerequisite: HORT 320

Principles and practical applications for fruit and vegetable establishment, culture, production, storage, and economics.

(Winter)