

**Iowa State University**  
**CURRICULUM IN HORTICULTURE**  
 Group Requirements  
 2003-2005

**Interpersonal and Public Communications Skills**

**12.5 credits**

3	Engl	104-	Freshman Composition	_____
3	Engl	105-	Freshman Composition	_____
3	Engl	302-	Business Communication <b>or</b>	_____
3	Engl	314-	Technical Communication	_____
0.5	Lib	160-	Library Instruction	_____
3	Sp Cm	212-	Fundamentals of Public Speaking <b>or</b>	_____
3	AgEds	311	Presentation and Sales Strategies for Agricultural Audiences	_____
Communications-intensive requirement (see department for procedure)				

**Mathematical Sciences**

**6-9 credits**

SELECT **ONE** COURSE FROM THE FOLLOWING GROUP:

3	Math	140-	Fundamentals of Algebra for Science & Higher Math <b>or</b>	_____
3	Math	150-	Discrete Mathematics for Business & Social Science <b>or</b>	_____
4	Math	165-	Calculus <b>or</b>	_____
4	Math	181-	Calculus and Differential Equations for the Life Sciences	_____

**AND** SELECT **ONE** COURSE FROM THE FOLLOWING GROUP:

4	Stat	101-	Principles of Statistics <b>or</b>	_____
3	Stat	104-	Introduction to Statistics <b>or</b>	_____
5	Stat	226-	Introduction to Business Statistics <b>or</b>	_____
4	Stat	401-	Statistical Methods for Research Workers	_____

**Physical Sciences**

**13 credits**

4	Chem	163-	General Chemistry <b>and</b>	_____
1	Chem	163L-	Laboratory in General Chemistry <b>or</b>	_____
4	Chem	177-	General Chemistry <b>and</b>	_____
1	Chem	177L-	Laboratory in General Chemistry	_____

3	Chem	164-	General Chemistry <b>and</b>	_____
1	Chem	164L-	Lab in General Chemistry <b>or</b>	_____
3	Chem	178 -	General Chemistry <b>and</b>	_____
1	Chem	178L-	Laboratory in General Chemistry <b>or</b>	_____

4	Phys	106-	The Physics of Common Experience <b>or</b>	_____
4	Phys	111-	General Physics	_____

**AND ONE** COURSE FROM THE FOLLOWING GROUP:

3	Chem	231-	Elementary Organic Chemistry <b>and</b>	_____
1	Chem	231L-	Laboratory in Elementary Organic Chem. <b>or</b>	_____
3	Chem	331-	Organic Chemistry <b>and</b>	_____
1	Chem	331L-	Laboratory in Organic Chemistry	_____

A student must take either (1) Chem 163/163L and Chem 231/231L series or (2) Chem 177/177L and 178/178L series and Chem 331/331L.

**Biological Sciences****18 credits**

3	Biol	201-	Principles of Biology I	<b>and</b>	_____
3	Biol	202-	Principles of Biology II		_____
<b>SELECT 12 CREDITS FROM THE FOLLOWING GROUP:</b>					
3	Bot	320-	Plant Physiology		_____
4	Bot	306-	Plant Taxonomy		_____
3	Bot	484-	Plant Ecology		_____
3	Biol	312-	Ecology		_____
3	Agron	230-	Crop Structure - Function Relationships		_____
3	Agron	260-	Soils and Environmental Quality		_____
3	Agron	317-	Principles of Weed Science		_____
3	Agron	354-	Soil Fertility		_____
3	Ent	370-	Insect Biology	<b>or</b>	_____
3	Ent	376-	Fundamentals of Entomology & Pest Management		_____
3	Ent	375-	Biological Control		_____
3	Bot	404-	Plant Anatomy		_____
3	PI P	407-	Principles of Plant Pathology		_____
4	For	416-	Forest Pest Management		_____
2	PI HP	391-	Clinical Plant Health		_____
1	Biol	201L-	Principles of Biology Laboratory I		_____
1	Biol	202L-	Principles of Biology Laboratory II		_____
3	Gen	320-	Genetics, Agriculture and Biotechnology	<b>or</b>	_____
3	Biol	301-	Principles of Genetics		_____
1	Biol	301L-	Principles of Genetics Laboratory		_____
3	Biol	302-	Molecular Cell Biology and Biochemistry		_____
1	Biol	302L-	Molecular Cell Biology and Biochemistry		_____

**Humanities, Ethics, and Social Science 15 credits**

3 Credits in Humanities (Music, Art, Religion, History, Philosophy, Foreign Language)	_____
3 Credits in Ethics (from an approved list)	_____
3 Credits in International perspectives (from an approved list)	_____
3 Credits of US diversity (from an approved list)	_____
3 Credits in Social Science	_____
Problem solving requirement (see department for procedure)	
Environmental intensive requirement (see departmental procedure)	
Communication intensive requirement (see departmental procedure)	

**Soil Science 3 credits**

3	Agron	154	Fundamentals of Soil Science	<b>or</b>	_____
3	Agron	155-	Soils for Horticultural Scientists		_____

**Horticultural Sciences 30 credits**

1	Hort	110-	Orientation in Horticulture		_____
3	Hort	221-	Principles of Horticulture		_____
3	Hort	222X-	Survey of Horticultural Crops		_____
<b>SELECT A MINIMUM OF 23 CREDITS FROM THE FOLLOWING GROUP:</b>					
3	Hort	282-	Educating Youth Through Horticulture		_____
2	Hort	283-	Pesticide Applicator Certification		_____
2	Hort	320-	Plant Nutrition		_____
1	Hort	320L	Horticultural Plant Nutrition Laboratory		_____
2	Hort	321-	Horticulture Physiology		_____
3	Hort	322-	Plant Propagation		_____
3	Hort	330-	Herbaceous Ornamental Plants		_____
4	Hort	332-	Greenhouse and Controlled Environments		_____

3	Hort	338-	Seed Science and Technology	_____
5	Hort	340-	Woody Landscape Plants	_____
1	Hort	341-	Shade Tree Cultivars	_____
3	Hort	342-	Landscape Plant Establishment and Maintenance	_____
4	Hort	344-	Landscape Horticulture	_____
2	Hort	345	History and Development of Public Gardens	_____
3	Hort	351-	Turfgrass Establishment and Maintenance	_____
1	Hort	351L-	Turfgrass Establishment and Maintenance Laboratory	_____
1-2	Hort	391	Horticulture Management Experience	_____
R	Hort	398X	Cooperative Education	_____
4	Hort	422-	Post-harvest Technology	_____
2	Hort	423-	Plant Tissue, Cell & Protoplast Culture	_____
2	Hort	424-	Sustainable Horticultural Systems	_____
2	Hort	425-	Horticultural Plant Breeding	_____
2	Hort	426X-	Plant Partnerships Symbioses in Horticulture	_____
3	Hort	433-	Tropical Plants and Interiorscapes	_____
4	Hort	434-	Floriculture Crop Production I	_____
3	Hort	435-	Floriculture Crop Production II	_____
2	Hort	436-	Greenhouse Crop Production III	_____
3	Hort	442-	Nursery Crop Production	_____
3	Hort	444-	Landscape Construction	_____
2	Hort	445-	Public Horticulture Management and Administration	_____
2	Hort	451-	Professional Turfgrass Management	_____
3	Hort	452-	Integrated Management of Diseases and Insect Pests of Turfgrasses	_____
2	Hort	453-	Sports Turf Management	_____
3	Hort	461-	Fruit Crop Production	_____
3	Hort	471-	Vegetable Crop Production and Management	_____
3	Hort	475-	Community Tree Management	_____
1-4	Hort	490-	Independent Study	_____
1-2	Hort	491-	Seed Science Internship Experience	_____
Arr.	Hort	493-	Workshop in Horticulture	_____
R	Hort	495-	Ag Travel Course Preparation	_____
3	Hort	496-	Horticulture Travel Course	_____
1	Hort	497X-	Professional Development Seminar	_____
2	Hort	511-	Integrated Management of Tropical Crops	_____
2	Hort	551-	Perennial Grasses	_____

**Transfer students may transfer up to 10 credits of 200 level courses in the horticultural sciences area**

**SPECIALIZED OPTIONS** -(a **minor** in an Approved Area of Study may be substituted for the specialized option with permission of student's advisor)

**ENVIRONMENTAL HORTICULTURE - 12 CREDITS**

Hort 424 must be among the courses that fulfill the Horticultural Sciences requirement.

3	Biol	312-	Ecology	_____
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**AND NINE OR MORE CREDITS FROM THE FOLLOWING GROUP:**

2	AST	324-	Soil and Water Conservation Management	_____
2	AST	425-	Impact of Agriculture on Water Quality	_____
3	Agron	260-	Soils and Environmental Quality	_____
3	Bot	304-	Plants and Civilization	_____
3	Bot	364-	Biology of Aquatic Plants and Algae	_____
3	Ent	375-	Biological Control	_____
3	Env S	293-	Environmental Planning	_____

3	Env S	330-	Environmental Systems	_____
3	Env S	382-	Environmental Sociology	_____
3	Env S	491-	Environmental Law	_____

**GREENHOUSE PRODUCTION AND MANAGEMENT -12 CREDITS**

Hort. 330, 322, 332, 422, 433, 434, 435, and 436 must be among the courses that fulfill the Horticultural Sciences requirement.

3	Acct	284-	Financial Accounting	_____
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AND **NINE** OR MORE CREDITS FROM THE FOLLOWING GROUP:

3	Econ	101-	Principles of Microeconomics	_____
3	Econ	102-	Principles of Macroeconomics	_____
3	Acct	215-	Legal Environment of Business	_____
3	Acct	285-	Managerial Accounting	_____
2	AST	358-	Small Power Equipment	_____
4	ComS	103-	Computer Applications <b>or</b>	_____
3	ComS	107-	Applied Computer Programming	_____
3	Mkt	340-	Principles of Marketing	_____
3	Ent	375-	Biological Control	_____
3	Mkt	442-	Sales Management	_____
3	Mkt	446-	Retailing	_____
3	Mkt	447-	Fundamentals of Consumer Behavior	_____

**FRUIT AND VEGETABLE PRODUCTION AND MANAGEMENT - 12 CREDITS**

Hort. 422, 461, and 471 must be among the courses that fulfill the Horticultural Sciences requirement.

3	Acct	284-	Financial Accounting	_____
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AND **NINE** OR MORE CREDITS FROM THE FOLLOWING GROUP

3	FSHN	272-	Basic Principles of Food Processing	_____
3	FSHN	471-	Food Processing	_____
2	FSHN	472-	Food Processing Lab	_____
2	FSHN	403-	Food Laws, Regulations and the Regulatory Process	_____
3	FSHN	405-	Food Quality Assurance	_____
3	Econ	101-	Principles of Microeconomics	_____
3	Econ	102-	Principles of Macroeconomics	_____
4	Econ	330-	Farm Planning, Production, and Organization	_____
3	Acct	215-	Legal Environment of Business	_____
3	Acct	285-	Managerial Accounting	_____
2	AST	358-	Small Power Equipment	_____
4	ComS	103-	Computer Applications <b>or</b>	_____
3	ComS	107-	Applied Computer Programming	_____
3	Mgmt	370-	Principles of Organization and Management	_____
3	Mkt	340-	Principles of Marketing	_____
3	Mkt	442-	Sales Management	_____
3	Mkt	446-	Retailing	_____
3	Mkt	447-	Fundamentals of Consumer Behavior	_____

**HORTICULTURAL COMMUNICATIONS AND PUBLIC EDUCATION - 20 credits**

Students in this option must take Engl 314 under Interpersonal and Public Communications.

SELECT A MINIMUM- OF **20** CREDITS FROM THE FOLLOWING GROUP

3	Engl	220-	Applied English Grammar	_____
3	Engl	303-	Free Lance Writing for Popular Magazines	_____
3	Engl	305-	Creative Writing - Nonfiction	_____

3	ComSt 102-	Fundamentals of Interpersonal Comm.	_____
3	ComSt 214-	Professional Communication	_____
3	ComSt 317-	Small Group Communication	_____
3	SpCom 312-	Business and Professional Speaking	_____
3	SpCom 313-	Communication for the Classroom Teacher	_____
2	AgEdS 310-	Foundations of Public Ag Ed Programs	_____
3	AgEdS 311-	Presentation and Sales Strategies for Ag.	_____
3	AgEdS 401-	Planning Ag Ed Programs	_____
3	JLMC 220-	Principles of Public Relations	_____

**NURSERY CROPS PRODUCTION AND MANAGEMENT - 12 CREDITS**

Hort 340, 322, 341, 342, and 442 must be among the courses that fulfill the Horticultural Sciences requirement.

3	Acct 284-	Financial Accounting	_____
AND <b>NINE</b> OR MORE CREDITS FROM THE FOLLOWING GROUP			
3	Acct 215-	Legal Environment of Business	_____
3	Acct 285-	Managerial Accounting	_____
2	AST 358-	Small Power Equipment	_____
3	Agron 206-	Introduction to Meteorology	_____
4	ComS 103-	Computer Applications <b>or</b>	_____
3	ComS 107-	Applied Computer Programming	_____
3	Econ 101-	Principles of Microeconomics	_____
3	Econ 102-	Principles of Macroeconomics	_____
4	Econ 330-	Farm Planning, Production, and Organization	_____
3	Mgmt 370-	Principles of Organization and Management	_____
3	Mkt 340-	Principles of Marketing	_____
3	Mkt 341-	Marketing Mgmt for Non-business Students	_____
3	Mkt 442-	Sales Management	_____
3	Mkt 446-	Retailing	_____
3	Mkt 447-	Fundamentals of Consumer Behavior	_____

**PUBLIC GARDEN MANAGEMENT AND ADMINISTRATION - 15 Credits**

Those who choose this option must take Bot 306, Ent 375 or Ent 376, PIP 407 or PIHP 391, Hort 330, 340, 433, 282, 283, 322, 445, and at least 1 credit of Hort 391. Other recommended courses are Hort 332, 341, 342, 344, 351 and 351L.

SELECT A MINIMUM OF **15** CREDITS FROM THE FOLLOWING GROUP

3	Acct 284-	Financial Accounting	_____
3	Engl 303-	Free Lance Writing for Popular Magazines	_____
3	Engl 309-	Report and Proposal Writing	_____
3	JLMC 220-	Principles of Public Relations (JLMC 220 in the 99-01 Catalog) <b>OR</b>	_____
	Mgmt 471-	Personnel and Human Resource Management	_____
3	AgEds 311-	Presentation and Sales Strategies for Agricultural Audiences <b>OR</b>	_____
	SpCm 312-	Business and Professional Speaking <b>OR</b>	_____
	SpCm 313-	Communication for the Classroom Teacher	_____

UP TO **6** CREDITS FROM THE LIST BELOW MAY BE SUBSTITUTED FOR ANY OF THE 15 CREDITS ABOVE

3	Acct 215-	Legal Environment of Business	_____
3	Acct 285-	Managerial Accounting	_____
3	Acct 316-	Business Law	_____
3	AgEds 402-	Methods of Teaching in Agricultural Science/Agribusiness	_____
3	AgEds 411	Technology, Rheteric and Professional Communication	_____

2	AST 358-	Small Power Equipment	_____
3	ComSt 214-	Professional Communication	_____
3	Engl 313-	Writing for the World Wide Web	_____
3	Engl 415-	Business and Technical Editing	_____
3	Engl 416-	Graphic Communication in Business and Technical Writing	_____
3	Fin 301 -	Principles of Finance	_____
3	Mgmt 370-	Principles of Organization and Management	_____
3	Mgmt 371-	Individual Behavior in Organizations	_____

**SCIENCE OPTION - 12 credits**

Those who choose the Science Option must take Botany 320, Chemistry 177, 177L, 178, 178L, 331, 331L, 332, 332L, Math 165 or 181, and Physics 111 and 112.

3	BBMB 301-	Survey of Biochemistry <b>or</b>	_____
3	BBMB 404-	Biochemistry	_____
4	Math 166-	Calculus II <b>or</b>	_____
4	Math 182-	Calculus and Differential Equations for the Life Sciences	_____
<b>AND FIVE OR MORE CREDITS FROM THE FOLLOWING GROUP:</b>			
2	BBMB 311-	Biochemistry Laboratory (for B B 301)	_____
3	BBMB 404-	Biochemistry	_____
3	BBMB 405-	Biochemistry	_____
3	BBMB 411-	General Biochemical Research Techniques	_____
1	Bot 303-	Introductory Micro-technique	_____
2	Chem 211-	Quantitative Analysis	_____
2	Chem 211L-	Quantitative Analysis Laboratory	_____
4	Chem 316-	Instrumental Methods of Chemical Analysis	_____
3	Chem 321-	Physical Chemistry I	_____
3	Chem 322-	Physical Chemistry II	_____
3	Chem 322L-	Laboratory in Physical Chemistry	_____
3	Com S 107-	Applied Computer Programming <b>or</b>	_____
3	Com S 205-	Computer Programming in FORTRAN	_____
3	Gen 410-	Transmission Genetics	_____
3	Gen 411-	Molecular Genetics	_____
3	Biol 301-	Principles of Genetics	_____
1	Biol 301L-	Genetics Laboratory	_____
3	Biol 302 -	Molecular Cell Biology and Biochemistry	_____
1	Biol 302L-	Molecular Cell Biology and Biochemistry Laboratory	_____

**TURFGRASS MANAGEMENT - 12 credits**

Hort. 351, 351L, 451, 452, 453, and 551 must be among the courses that fulfill the Horticultural Sciences requirement.

3	Acct 284-	Financial Accounting	_____
<b>AND NINE OR MORE CREDITS FROM THE FOLLOWING GROUP:</b>			
3	Acct 285-	Managerial Accounting	_____
2	AST 324-	Soil & Water Conservation Management	_____
1	AST 326-	Conservation Surveying and Design	_____
2	AST 358-	Small Power Equipment	_____
3	Agron 206-	Introduction to Meteorology	_____
3	Agron 260-	Soils and Environmental Quality	_____
4	Agron 356-	Soil, Fertilizers, and Water Management	_____

3	Agron	459-	Environmental Soil Chemistry	_____
4	Com S	103-	Computer Applications <b>or</b>	_____
3	Com S	107-	Applied Computer Programming	_____
3	HRI	287-	Introduction to Management in Selected Occupations	_____
3	HRI	288-	Introduction to the Hotel, Restaurant, and Institution Mgt.	_____
2	HRI	289-	Private Club Operations	_____
3	Mgmt	370-	Principles of Organization and Management	_____
3	PI HP	206-	Plant Health Biology	_____
2	PI HP	391-	Clinical Plant Health	_____
3	Ent	375-	Biological Control	_____

**Free Electives - 14 - 18 credits**

Department/ Cr.	Course Number		
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

**128.5 Total Credits**