

Food Systems Major B.S.

Fall 2018

Course and schedule availability subject to change. Use your APAS report to find your exact requirements.

Common Food Systems Requirements (common to all tracks):

- A. Integrated Food Systems Core** **15 credits**
- ___ FDSY 1016W Growing Food & Building Community: Urban Agriculture in the Twin Cities (3 cr, F)
or AGRO 1660W First-Year Colloquium/Experience in Agroecosystems (2cr, F/S)
- ___ FDSY 2101 Plant Production Systems (3cr, S) prereq one of: BIOL 1001, 1009, HORT 1001, AGRO 1101
- ___ BBE 3201 Sustainability of Food Systems: A Life Cycle Perspective^{GP} (3cr, F/S/Su) *online*
- ___ APEC 3202 An Introduction to the Food System: Analysis, Management
and Design (3cr, F)^L prereq APEC 1101 or ECON 1101
- ___ FDSY 4101 Holistic Approaches to Improving Food System Sustainability (3 cr, S)
prereqs APEC 3202, BBE 3201, FDSY 2101
- ___ CFAN 3096 Making the Most of Your Internship^{EL} (1 cr, S) prereq prior secured internship
or HORT 4096W Professional Experience Program: Internship^{EL} (2 cr, F/S)
or AGRO 4096W Professional Experience Program: Internship^{EL} (2 cr, F/S)
- B. Communications** **11 credits**
- ___ WRIT 1301 University Writing (4cr, F/S)
- ___ AFEE 2421 Communication for Agriculture, Food, and the Environment (3 cr, F/S)
or COMM 1101 Introduction to Public Speaking^{CIV} (3 cr, F/S)
- ___ WRIT 3562W Technical and Professional Writing (4cr, F/S/Su)
- C. Physical and Biological Sciences** **7 credits**
- ___ FSCN 1112 Principles of Nutrition (3cr, F/S)
- ___ CHEM 1061 Chemical Principles I *and*
and CHEM 1065 Chemical Principles I Lab (4cr, F/S)
or CHEM 1015 Introductory Chemistry: Lecture
and CHEM 1017 Introductory Chemistry: Laboratory (4cr, F/S)
- D. Mathematical Thinking** **3 credits**
- ___ MATH 1031 College Algebra and Probability (F/S)
or MATH 1051 Pre-calculus 1 (F/S)
- E. Social Sciences** **4 credits**
- ___ APEC 1101 Principles of Microeconomics^{GP, SS} (F/S)
or ECON 1101 Principles of Microeconomics^{GP, SS} (F/S)
- F. Liberal Education Core Requirements not filled by major courses** **9 credits**
- ___ Arts and Humanities (3 cr)
- ___ Literature (3 cr)
- ___ Historical Perspective (3 cr)

- G. **Themes of Liberal Education** (complete 3 besides GP) **12 credits**
 ___ CIV = Civic Life and Ethics (3 cr) *satisfied if take COMM 1101*
 ___ DSJ = Diversity and Social Justice in the United States (3 cr)
 ___ E = Environment (3 cr) *satisfied if take SOIL 2125 or GCC 3001*
x GP = Global Perspectives (3 cr) *satisfied with BBE 3201*
 ___ TS = Technology & Society (3 cr) *satisfied if take CFAN 2333, HORT 1014*
- I. **Interdisciplinary Learning (IL)** requirement satisfied with APEC 3202 **0 additional credits**
 J. **Experiential Learning (EL)** requirement satisfied with HORT 4096W, AGRO 4096W or CFAN 3096 **0 additional credits**

Total Common Food Systems Requirements: 61 credits

Food Systems Tracks:

Organic and Local Food Production Track

Required courses:

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|----------------|---|
| ___ APS 5103 | Sustainable Agricultural Concepts (3 cr, F)
prereq BIOL 1001, 1009 or HORT 1001 |
| ___ CFAN 2333 | Insects, Microbes and Plants (3 cr, F) ^{TS} |
| ___ HORT 1001 | Plant Propagation (4 cr, F/S) |
| ___ HORT 2100 | Agricultural Biochemistry (3 cr, F) prereq CHEM 1015 or 1061 |
| ___ HORT 3131 | Student Organic Farm Planning, Growing, Marketing (3 cr, F)
prereq HORT 1001 or BIOL 1001 or BIOL 1009 |
| ___ PLSC 3005W | Plant Physiology (4 cr, S)
prereq BIOL 1001, 1009 or HORT 1001, HORT 2100 or BIOC 3021 |
| ___ SOIL 2125 | Basic Soil Science ^E (4 cr, F/S) prereq CHEM 1015 or 1061 |

Choose at least 10 credits from the following list:

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|----------------|--|
| ___ BIOL 1009 | General Biology (4cr, F/S) |
| ___ ESPM 3108 | Ecology of Managed Systems (3 cr, F) prereq BIOL 1001 or 1009 or HORT 1001 |
| ___ GCC 3001 | Grand Challenge: Can We Feed the World Without Destroying It? ^E (3cr, F) |
| ___ GCC 3017 | Grand Challenge: World Food Problems: Agronomics, Economics & Hunger ^{GP,ID}
(3 cr, F) |
| ___ HORT 1015 | Woody and Herbaceous Plants (4 cr, F) |
| ___ HORT 4110 | Spring Flowering Bulbs (1 cr, odd Springs) prereq HORT 1015 |
| ___ HORT 4111 | Prairie Perennials and Grasses (1 cr, odd Falls) prereq HORT 1015 |
| ___ HORT 4112 | Flowering Trees and Shrubs (1 cr, periodic Springs) prereq HORT 1001, 1015 |
| ___ HORT 4113 | Identifying Plants for the Home and Garden (1 cr, even Springs) |
| ___ HORT 4141W | Scheduling Crops for Protected Environments (4 cr, S) prereq HORT 1001 or 1015 |
| ___ HORT 4071W | Applications of Biotechnology to Plant Improvement (4 cr, F)
prereq BIOL 1009 or equiv |
| ___ HORT 4461 | Horticultural Marketing (3 cr,F) prereq APEC 1101 or ECON 1101 |

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___ HORT 5031	Organic Viticulture and Fruit Production (3 cr, F) prereq HORT 1001, PLSC 3005W
___ HORT 5032	Organic Vegetable Production (3 cr, S) prereq SOIL 2125, HORT 1001 or BIOL 1001 or 1009
___ PLSC 3401	Plant Genetics and Breeding (4 cr, S) prereq BIOL 1009 or equiv
___ SOIL 3416	Plant Nutrients in the Environment (3 cr, S) prereq SOIL 2125

Credits in Organic and Local Food Production Track: 34 credits

Agroecology Track

Required courses:

___ HORT 1001	Plant Propagation (4cr, F/S)
or BIOL 1009	General Biology (4cr, F/S)
___ SOIL 2125	Basic Soil Science ^E (4 cr, F/S) prereq CHEM 1015 or 1061
___ HORT 2100	Agricultural Biochemistry (3 cr, F) prereqs CHEM 1015 or 1061
or BIOC 3021	Biochemistry (3cr, F/S) prereqs CHEM 1061/1065, 1062/1066, 2301, BIOL 1009
___ PLSC 3005W	Plant Physiology (4cr, S) prereq HORT 1001 or BIOL 1009, HORT 2100 or BIOC 3021
___ ESPM 3108	Ecology of Managed Systems ^E (3 cr, F) prereq BIOL 1001 or BIOL 1009 or HORT 1001

Choose at least 16 credits from the following, of which at least 9 credits must be upper division (3xxx or above):

___ AGRO 2501	Plant Identification for Urban and Rural Landscapes (1 cr, F) prereq BIOL 1009 or equiv
___ AGRO 4505	Biology, Ecology, and Management of Invasive Plants (3 cr, S) prereq SOIL 2125
___ AGRO 4888	Issues in Sustainable Agriculture (2 cr, F) prereq AGRO 1103, SOIL 2125 or equiv
___ CFAN 2333	Insects, Microbes and Plants ^{TS} (3 cr, F)
___ CHEM 2301	Organic Chemistry I (3 cr, F/S) prereq CHEM 1062/1066
___ ENT 5341	Biological Control of Insects and Weeds (3 cr, S) prereqs BIOL 1009, EEB 3001
___ ESPM 5071	Ecological Restoration (4 cr, F) prereq one college course in ecology, one college course in plant science or botany
___ GCC 3001	Grand Challenge: Can We Feed the World Without Destroying It? ^E (3cr, F)
___ GCC 3017	Grand Challenge: World Food Problems: Agronomics, Economics & Hunger ^{GP, ID} (3 cr, F)
___ HORT 1014	Edible Landscapes ^{TS} (3 cr, F/S)

Credits in Agroecology Track:

34 credits

Consumers and Markets Track

Required course:

- ___ HORT 1001 Plant Propagation (4cr, F/S)
or BIOL 1009 General Biology (4cr, F/S)

Select at least 30 credits from the following, of which at least 16 must be upper division (3xxx or above):

- ___ ANSC 1511 Food Animal Products for Consumers (3 cr, F)
___ APEC 3071 Microeconomics of International Development (3 cr, F)
prereq APEC 1101, 1102, ECON 1101, 1102 or instr consent
___ APEC 3411 Commodity Marketing (3 cr, F)
prereq APEC 1101 or ECON 1101
___ APEC 3451 Food and Agricultural Sales (3 cr, S)
prereq APEC 1101 or ECON 1101
___ APEC 3501 Agribusiness Finance(3 cr, F)
prereq APEC 1251 or ACCT 2050
___ APEC 3551 Entrepreneurship Fund. for Value-Added Rural Business (3 cr, F)
prereq APEC 1101
___ APEC 3811 Principles of Farm Management (3 cr, F)
prereq APEC 1101 or ECON 1101
___ APEC 3840 Cooperative Organization (3 cr, F)
prereq APEC 1101 or ECON 1101
___ APEC 4451W Food Marketing Economics^{CIV} (3 cr, F)
prereq APEC 1101 or ECON 1101
___ APEC/HORT 4461 Horticultural Marketing (3 cr, F)
prereq APEC 1101 or ECON 1101
___ APEC 4481 Futures and Options Markets (3 cr, S)
prereq APEC 3001 or ECON 3101, ANSC 2211 or OMS 1550 or STAT 3011
___ APEC 4821W Business Economics & Strategy (3 cr, S)
prereq APEC 3002, [APEC 3501 or FINA 3001], MGMT 3001
___ FSCN 1011 Science of Food and Cooking (4 cr, F/S)
___ FSCN 1102 Food: Safety Risks and Technology^{CIV} (3 cr, S)
___ FSCN 2001 Healthy Foods Healthy Lives: A Food Syst. Appr. to Cooking (3 cr, S)
___ FSCN 2021 Introductory Microbiology (4 cr, F/S)
prereq BIOL 1009, CHEM 1015
___ FSCN 3102 Introduction to Food Science (3 cr, F)
prereq CHEM 1062 and 1066
___ FSCN 3612 Life Cycle Nutrition (3 cr, F)
prereq FSCN 1112, CHEM 1062 and 1066
___ FSCN 3615 Sociocultural Aspects of Food, Nutrition and Health^{GP} (3 cr, S)
___ FSCN 4131 Food Quality(3 cr, F)
prereq FSCN 1102
___ GCC 3001 Grand Challenge: Can We Feed the World Without Destroying It?^E (3cr, F)
___ GCC 3017 Grand Challenge: World Food Problems: Agronomics, Economics & Hunger^{GP, ID}
(3 cr, F)
___ HORT 1031 Vines and Wines: Introduction to Viticulture and Enology (3 cr, F)
prereq 21 yrs of age by date of 1st class meeting

Credits in Consumers and Markets Track: 34 credits

Individualized Track

Required course:

____ HORT 1001 Plant Propagation (4cr, F/S)
 or BIOL 1009 General Biology (4cr, F/S)

Students choosing to follow this track will identify, in consultation and with the approval of a faculty mentor, a track made up of a minimum of 30 credits where at least 16 credits are upper division (3xxx or higher). The track will address the interests and ambitions of the student and will be consistent with the learning outcomes of the Food Systems major.

Credits in Individualized Track: 34 credits