Common Food Systems Requirements (common to all tracks):

A. Integrated Food Systems Core  
   15 credits
   __ FDSY 1016 W Growing Food & Building Community: Urban Agriculture in the Twin Cities (3 cr, F)  
   or AGRO 1660W First-Year Colloquium/Experience in Agroecosystems (2 cr, F/S)  
   __ FDSY 2101 Plant Production Systems (3 cr, S) prerreqs: BIOL 1001, 1009, HORT 1001, AGRO 1101  
   __ BBE 3201 Sustainability of Food Systems: A Life Cycle Perspective\textsuperscript{GP} (3 cr, F/S/Su)\textsuperscript{online}  
   __ APEC 3202 An Introduction to the Food System: Analysis, Management and Design (3 cr, F) prerreq: APEC 1101 or ECON 1101  
   __ FDSY 4101 Holistic Approaches to Improving Food System Sustainability (3 cr, S) prerreqs: APEC 3202, BBE 3201, FDSY 2101  
   __ CFAN 3096 Making the Most of Your Internship\textsuperscript{EL}(1 cr, S) prerreq: prior secured internship  
   or HORT 4096W Professional Experience Program: Internship\textsuperscript{EL} (2 cr, F/S)  
   or AGRO 4096W Professional Experience Program: Internship\textsuperscript{EL} (2 cr, F/S)

B. Communications  
   11 credits
   __ WRIT 1301 University Writing (4 cr, F/S)  
   __ AFEE 2421 Communication for Agriculture, Food, and the Environment (3 cr, F/S)  
   or COMM 1101 Introduction to Public Speaking\textsuperscript{CIV} (3 cr, F/S)  
   __ WRIT 3562W Technical and Professional Writing (4 cr, F/S/Su)

C. Physical and Biological Sciences  
   7 credits
   __ FSCN 1112 Principles of Nutrition (3 cr, F/S)  
   __ CHEM 1061 Chemical Principles I and CHEM 1065 Chemical Principles I Lab (4 cr, F/S)  
   or CHEM 1015 Introductory Chemistry: Lecture and CHEM 1017 Introductory Chemistry: Laboratory (4 cr, 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\textsuperscript{GP, SS} (F/S)  
   or ECON 1101 Principles of Microeconomics \textsuperscript{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)

Food Systems – last updated May 2018
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:*

____ 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 ScienceE (4 cr, F/S) *prereq CHEM 1015 or 1061*

Choose at least 10 credits from the following list:

____ 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?F (3cr, F)

____ GCC 3017 Grand Challenge: World Food Problems: Agronomics, Economics & HungerGP,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 4461W Horticultural Marketing (3 cr,F) *prereq APEC 1101 or ECON 1101*

*Continued on next page*
**Agroecology Track**

*Required courses:*

- **HORT 1001** Plant Propagation (4cr, F/S)
  *or* **BIOL 1009** General Biology (4cr, F/S)
- **SOIL 2125** Basic Soil Science (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 (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 (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? (3cr, F)
- **GCC 3017** Grand Challenge: World Food Problems: Agronomics, Economics & Hunger (3 cr, F)
- **HORT 1014** Edible Landscapes (3 cr, F/S)

*Credits in Agroecology Track: 34 credits*
## Consumers and Markets Track

**Required course:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Term(s)</th>
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<tbody>
<tr>
<td>HORT 1001</td>
<td>Plant Propagation</td>
<td>4</td>
<td>F/S</td>
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<tr>
<td>or BIOL 1009</td>
<td>General Biology</td>
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<td>F/S</td>
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Select at least 30 credits from the following, of which at least 16 must be upper division (3xx or above):

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites</th>
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<tbody>
<tr>
<td>ANSC 1511</td>
<td>Food Animal Products for Consumers</td>
<td>3</td>
<td>F</td>
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<tr>
<td>APEC 3071</td>
<td>Microeconomics of International Development</td>
<td>3</td>
<td>APEC 1101, 1102, ECON 1101, 1102 or instr consent</td>
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<tr>
<td>APEC 3411</td>
<td>Commodity Marketing</td>
<td>3</td>
<td>APEC 1101 or ECON 1101</td>
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<tr>
<td>APEC 3451</td>
<td>Food and Agricultural Sales</td>
<td>3</td>
<td>APEC 1101 or ECON 1101</td>
</tr>
<tr>
<td>APEC 3501</td>
<td>Agribusiness Finance</td>
<td>3</td>
<td>APEC 1251 or ACCT 2050</td>
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<tr>
<td>APEC 3551</td>
<td>Entrepreneurship Fund. for Value-Added Rural Business</td>
<td>3</td>
<td>APEC 1101</td>
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<tr>
<td>APEC 3811</td>
<td>Principles of Farm Management</td>
<td>3</td>
<td>APEC 1101 or ECON 1101</td>
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<td>APEC 3840</td>
<td>Cooperative Organization</td>
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<td>APEC 4451W</td>
<td>Food Marketing Economics</td>
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<td>APEC/HORT 4461</td>
<td>Horticultural Marketing</td>
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<td>APEC 1101 or ECON 1101</td>
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<tr>
<td>APEC 4481</td>
<td>Futures and Options Markets</td>
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<td>APEC 3001 or ECON 3101, ANSC 2211 or OMS 1550 or STAT 3011</td>
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<tr>
<td>APEC 4821W</td>
<td>Business Economics &amp; Strategy</td>
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<td>APEC 3002, [APEC 3501 or FINA 3001], MGMT 3001</td>
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<tr>
<td>FSCN 1011</td>
<td>Science of Food and Cooking</td>
<td>4</td>
<td>F/S</td>
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<td>FSCN 1102</td>
<td>Food: Safety Risks and Technology</td>
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<td>F/S</td>
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<td>FSCN 2001</td>
<td>Healthy Foods Healthy Lives: A Food Syst. Appr. to Cooking</td>
<td>3</td>
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<td>Introductory Microbiology</td>
<td>4</td>
<td>BIOL 1009, CHEM 1015</td>
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<td>FSCN 3102</td>
<td>Introduction to Food Science</td>
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<td>CHEM 1062 and 1066</td>
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<td>FSCN 3612</td>
<td>Life Cycle Nutrition</td>
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<td>CHEM 1062 and 1066</td>
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<td>FSCN 3615</td>
<td>Sociocultural Aspects of Food, Nutrition and Health</td>
<td>3</td>
<td>F/S</td>
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<td>FSCN 4131</td>
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<td>GCC 3001</td>
<td>Grand Challenge: Can We Feed the World Without Destroying It?</td>
<td>3</td>
<td>F/S</td>
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<tr>
<td>GCC 3017</td>
<td>Grand Challenge: World Food Problems: Agronomics, Economics &amp; Hunger GP,IO</td>
<td>3</td>
<td>F/S</td>
</tr>
<tr>
<td>HORT 1031</td>
<td>Vines and Wines: Introduction to Viticulture and Enology</td>
<td>3</td>
<td>F/S</td>
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</tbody>
</table>

**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**