METROPOLITAN FOOD & ENVIRONMENTAL SYSTEMS, BS

for the degree of Bachelor of Science Major in Metropolitan Food & Environmental Systems

department website: https://mfst.illinois.edu/
overview of college admissions & requirements: https://academics.aces.illinois.edu/prospective-students
college website: https://aces.illinois.edu/
program director: Megan Dailey, Ph.D., mdailey5@illinois.edu
program office: 215 Mumford Hall, 1301 W. Gregory Dr., Urbana IL
program phone: (217) 244-5567

The Metropolitan Food & Environmental Systems (MFST) program uses an interdisciplinary approach to understanding and implementing solutions in the area of urban food and environmental systems to ensure the sustainability of readily available nutritious foods for metropolitan populations. The students in this major will learn to understand the science and practice of food production and security across urban environmental, economic, social, and health contexts, while maintaining environmental sustainability. Students in this program will be prepared for jobs in impact areas related to food systems, such as government, non-governmental organizations, institutional food buyers, investment firms, financial and insurance companies, industry, retail, and food service. Alternatively, students may choose to pursue post-baccalaureate education, including law school and graduate school in food systems or in specific areas of the food system. Because the MFST curricula includes required training in STEM education, critical thinking, scientific literacy, communication and leadership, students will obtain the skills necessary to traverse an ever-changing job market and have the freedom to choose from many career-life options.

A minimum of 127 credit hours are required for graduation, including General Education Requirements and the MFST Core Curriculum. Because the core curriculum includes many College of Agricultural, Consumer and Environmental Sciences (ACES) departmental course requirements, the students in MFST have the unique opportunity to minor in many of the ACES departments or to delve deeper into a food system area of interest in addition to the core courses, including (but not limited to) advanced nutrition, plant or animal production, food processing, food safety, environmental sustainability, climate change, or landscape architecture.

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Prescribed Courses including Campus General Education

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>RHET 105</td>
<td>Writing and Research</td>
<td>4</td>
</tr>
<tr>
<td>LEAD 230</td>
<td>Leadership Communications</td>
<td>3</td>
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<tr>
<td>Cultural Studies</td>
<td></td>
<td>9</td>
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</table>

Core Curriculum

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>LEAD 340</td>
<td>Leadership Ethics &amp; Society: Addressing Contemporary Challenges (US Minority)</td>
<td></td>
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<tr>
<td>ACE 251</td>
<td>The World Food Economy (Non-Western) or CPSC 450 The Global Food Production Web</td>
<td></td>
</tr>
<tr>
<td>TSM 311</td>
<td>Humanity in the Food Web</td>
<td>6</td>
</tr>
<tr>
<td>Select one course from campus approved list</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Natural Science and Technology</td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>CHEM 102</td>
<td>General Chemistry I &amp; CHEM 103 and General Chemistry Lab I</td>
<td></td>
</tr>
<tr>
<td>CHEM 104</td>
<td>General Chemistry II &amp; CHEM 108 and General Chemistry Lab II</td>
<td></td>
</tr>
<tr>
<td>Quantitative Reasoning I</td>
<td></td>
<td>3-5</td>
</tr>
<tr>
<td>Quantitative Reasoning II</td>
<td></td>
<td>3-4</td>
</tr>
<tr>
<td>ACE 261</td>
<td>Applied Statistical Methods or CPSC Intro to Applied Statistics</td>
<td></td>
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<tr>
<td>Social &amp; Behavioral Sciences</td>
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<td>7</td>
</tr>
<tr>
<td>ACE 100</td>
<td>Introduction to Applied Microeconomics</td>
<td>4</td>
</tr>
<tr>
<td>ACE 255</td>
<td>Economics of Food and Environmental Justice</td>
<td>3</td>
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</table>

Required Introductory Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACES 101</td>
<td>Contemporary Issues in ACES or ACES 200ACES Transfer Orientation</td>
<td>0 or 2</td>
</tr>
<tr>
<td>ACES 102</td>
<td>Intro Sustainable Food Systems</td>
<td>3</td>
</tr>
<tr>
<td>MFST 101</td>
<td>Experiencing Food Systems</td>
<td>3</td>
</tr>
<tr>
<td>ANSC 100</td>
<td>Intro to Animal Sciences</td>
<td>4</td>
</tr>
<tr>
<td>CPSC 112</td>
<td>Introduction to Crop Sciences or HORT 100Introduction to Horticulture</td>
<td>3 or 4</td>
</tr>
<tr>
<td>NRES 102</td>
<td>Introduction to NRES</td>
<td>3</td>
</tr>
<tr>
<td>NRES 201</td>
<td>Introductory Soils</td>
<td>4</td>
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</tbody>
</table>

Human Nutrition

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>FSHN 120</td>
<td>Contemporary Nutrition or FSHN 220Principles of Nutrition</td>
<td>3</td>
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</tbody>
</table>

Economics I and II

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACE 100</td>
<td>Introduction to Applied Microeconomics (fulfills SBS requirement)</td>
<td>4</td>
</tr>
<tr>
<td>ACE 255</td>
<td>Economics of Food and Environmental Justice (fulfills SBS requirement)</td>
<td>3</td>
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</tbody>
</table>

Food Production I and II - Choose two from the following list:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>ANSC 301</td>
<td>Food Animal Production, Management, and Evaluation</td>
<td></td>
</tr>
<tr>
<td>ANSC 309</td>
<td>Meat Production and Marketing (If you take ANSC 309, you must take a 4-hour upper-level course here or from another list)</td>
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</tr>
<tr>
<td>ANSC 400</td>
<td>Dairy Herd Management</td>
<td></td>
</tr>
<tr>
<td>ANSC 401</td>
<td>Beef Production</td>
<td></td>
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<tr>
<td>ANSC 402</td>
<td>Sheep Production</td>
<td></td>
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<tr>
<td>ANSC 403</td>
<td>Pork Production</td>
<td></td>
</tr>
<tr>
<td>ANSC 404</td>
<td>Poultry Science</td>
<td></td>
</tr>
</tbody>
</table>

Information listed in this catalog is current as of 06/2020
CPSC 418  Crop Growth and Management
CPSC 437  Principles of Agroecology
HORT 341  Greenhouse Mgmt and Production
HORT 360  Vegetable Crop Production
HORT 421  Horticultural Physiology
HORT 435  Urban Food Production
NRES 488  Soil Fertility and Fertilizers

Urban Planning I - Choose one from the following list: 3
UP 101  Introduction to City Planning
UP 116  Urban Informatics I
UP 136  Urban Sustainability
UP 203  Cities: Planning & Urban Life
UP 204  Chicago: Planning & Urban Life
UP 205  Ecology & Environmental Sustainability
UP 260  Social Inequality and Planning

Urban Planning II - Choose one from the following list: 3-4
UP 330  The Modern American City
UP 340  Planning for Healthy Cities
UP 345  Economic Development Planning
UP 405  Watershed Ecology and Planning
UP 406  Urban Ecology
UP 473  Housing & Urban Policy
UP 475  Real Estate Development Fundamentals

Policy I - Choose one from the following list: 3
ACE 199  Undergraduate Open Seminar (Food Ag & Pol)
ACE 291  Ag Policy & Leadership
ACE 292  Farm, Food & Environmental Policy
UP 211  Local Planning, Gov't and Law

Policy II - Choose one from the following list: 3-4
ACE 306  Food Law
ACE 403  Agricultural Law
ACE 406  Environmental Law
ACE 410  Energy Economics
ACE 411  Environment and Development
ACE 456  Agr and Food Policies
NRES 424  US Environ, Justic & Policy
UP 407  State and Local Public Finance

Technology I - Choose one from the following list: 2-4
ABE 141  ABE Principles: Biological
ABE 223  ABE Principles: Machine Syst
ABE 224  ABE Principles: Soil & Water
ABE 225  ABE Principles: Bioenvironment
ABE 226  ABE Principles: Bioprocessing
ANSC 110  Life With Animals and Biotech
CPSC 226  Introduction to Weed Science
CPSC 261  Biotechnology in Agriculture
CPSC 265  Genetic Engineering Lab
CPSC 266  Data in Biology and Agriculture
TSM 232  Materials and Construction Sys
TSM 234  Wiring, Motors and Control Sys

Technology II - Choose one from the following list: 2-3
ANSC 409  Meat Science

CPSC 408  Integrated Pest Management
CPSC 426  Weed Mgt in Agronomic Crops
CPSC 428  Weed Science Practicum (If you take
CPSC 428, you must take a 4-hour upper-level course from another list)

CPSC 491  Ugrad Bioinformatics Seminar (Intro to R Programming - if you take CPSC 491, you must take a 4-hour upper-level course from another list)

FSHN 460  Food Processing Engineering
FSHN 465  Principles of Food Technology
FSHN 469  Package Engineering
TSM 352  Land and Water Mgt Systems
TSM 371  Residential Housing Design
TSM 372  Environ Control & HVAC Systems
TSM 430  Project Management
TSM 435  Elec Computer Ctrl Sys
TSM 438  Renewable Energy Applications
TSM 465  Chemical Applications Systems
TSM 467  Precision Agric Technology
TSM 486  Grain Bioprocessing Coproducts

Advanced Scientific Literacy - Choose one from the following list: 3-4
ACE 431  Agri-food Strategic Management
ANSC 444  Applied Animal Genetics
ANSC 448  Math Modeling in Life Sciences
CPSC 440  Applied Statistical Methods I
FSHN 428  Community Nutrition
HDFS 420  Inequality, Public Policy, and U.S. Families
HDFS 461  Family Life Education
NRES 421  Quantitative Methods in NRES
NRES 427  Modeling Natural Resources
NRES 340  Environ Social Sci Res Meth
UP 316  Urban Informatics II
UP 418  GIS for Planners
UP 443  Scenarios, Plans & Future Cities
UP 457  Small Town/Rural Planning Workshop
UP 478  Community Development Workshop

Social Ecology - Choose one from the following list: 3
ACE 335  Food Marketing and Behavior
HDFS 420  Inequality, Public Policy, and U.S. Families
NRES 428  Valuing Nature

Social Impact in Practice - Choose one from the following list: 3-9
LEAD 480  Collaborative Leadership
HDFS 494  Applied Research Methods
MFST 450  Social Impact Learning Experience (MFST 450 & MFST 397 can only equal a total of 12 hours)

Experiential Learning Series 7-16
MFST 301  Experiential Learning Preparedness & Planning 1
MFST 397  Experiential Learning 3 to 9
MFST 401  Experiential Learning Review and Reflection 3

Capstone 3

Information listed in this catalog is current as of 06/2020
<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>MFST 498</td>
<td>Metropolitan Food &amp; Environmental Systems Capstone</td>
<td>3</td>
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**Total hours:** 127