APPROVED BY SENATE
10/14/2019

New Proposal

Date Submitted: 09/30/19 5:04 pm

Viewing: **: Metropolitan Food and Environmental Systems, BS**

Last edit: 10/02/19 3:54 pm

Changes proposed by: Megan Dailey

In Workflow

1. **U Program Review**
2. **1306 Head**
3. **1733 Head**
4. **KR Dean**
5. **KL Committee Chair**
6. **KL Dean**
7. **University Librarian**
8. **Provost**
9. **Senate EPC**
10. Senate
11. U Senate Conf
12. Board of Trustees
13. IBHE
14. DMI

Approval Path

1. 10/01/19 8:17 am
   Deb Forgacs (dforgacs):
   Approved for U Program Review
2. 10/01/19 8:50 am
   Anna Ball (aball):
   Approved for 1306 Head
3. 10/02/19 12:22 pm
   Rolf Pendall (rpendall):
   Approved for 1733 Head
4. 10/02/19 12:44 pm
   Nicole Turner (nicturn):
   Approved for KR Dean

5. 10/02/19 3:42 pm Anthony Yannarell (acyann): Approved for KL Committee Chair
6. 10/02/19 3:44 pm Anna Ball (aball): Approved for KL Dean
7. 10/02/19 3:50 pm John Wilkin (jpwilkin): Approved for University Librarian
8. 10/02/19 3:55 pm Kathy Martensen (kmartens): Approved for Provost

Proposal Type

Proposal Type:
Major (ex. Special Education)

Proposal Title
Rev. 1: Establish a new major in Metropolitan Food and Environmental Systems, leading to the degree of Bachelor of Science in the College of Agricultural, Consumer and Environmental Sciences

Is this program available on campus and online?	No
Official Program Name	Metropolitan Food and Environmental Systems, BS
Banner/Codebook Name	
Corresponding Degree	BS Bachelor of Science

Program Code:

Major Code	Minor Code	Conc Code

Degree Code	
EPC Control Number	EP.20.02, Rev. 1
Senate Approval Date	
Senate Conference Approval Date	
BOT Approval Date	
IBHE Approval Date	
Effective Date:	
Effective Catalog Term	Fall 2020
Sponsor College	Agr, Consumer, & Env Sciences
Sponsor Department	Agricultural, Consumer and Environmental Sciences
Sponsor Name	Megan Dailey
Sponsor Email	mdailey5@illinois.edu
College Contact	Anthony (Tony) Yannarell
College Contact Email	acyann@illinois.edu

Is this program interdisciplinary?

Yes

Interdisciplinary Colleges and Departments (list other colleges/departments which are involved other than the sponsor chose above)

Please describe the oversight/governance for this program, e.g., traditional departmental/college governance. Inclusion of/roles of elected faculty committees? Inclusion of/roles of any advisory committees.

College	Fine & Applied Arts
Department	Urban & Regional Planning

Do you need to add an additional interdisciplinary relationship?

No

Academic Level	Undergraduate

Will you admit to the concentration directly?	No
Is a concentration required for graduation?	No

Program Description and Justification

Provide a ***brief*** description and justification of the program, including highlights of the program objectives, and the careers, occupations, or further educational opportunities for which the program will prepare graduates, when appropriate.

DESCRIPTION: We propose a new major, housed centrally in the College of ACES that uses an interdisciplinary approach to understanding and implementing solutions in the areas of metropolitan food and environmental systems. The students in this major will learn to understand the science and practice of food production, processing, and security across urban environmental, economic, and social contexts, while maintaining environmental sustainability of metropolitan areas. A hallmark of this one of a kind undergraduate degree program includes multiple experiential learning activities, including a three course sequence where the students prepare for, execute, and reflect on an off-campus professional job opportunity in food systems. We have also combined a STEM-based curriculum with leadership and communication skills to meet our objective for students to become logical and critical thought leaders that take a systems-level approach to decision making. This program will not only provide the students with an education, but also the skills to build a career and establish a movement towards better food systems.

JUSTIFICATION: Feeding the world's future population in a fashion that sustainably promotes environmental and human health is the most pressing problem facing the planet and its inhabitants. In response to this challenge, local food systems have become a fast-emerging sector of agricultural and food science in major metropolitan areas. Yet, this topic has received surprisingly little attention from land-grant universities with respect to curricula development and student training. Several colleges and universities in Illinois (e.g. Chicago State University, Loyola University, DePaul University) have programs or concentrations in urban food production and related disciplines (e.g., sustainable agriculture), but there is no undergraduate major in Illinois that takes a holistic, systems-oriented approach to the training of students in the science and practice of metropolitan food systems. The University of Illinois is uniquely equipped to develop such a major, by integrating our established expertise in the College of Agriculture, Consumer and Environmental Sciences (ACES). The potential impacts of such a program will be wide-ranging: 1) demand for trained individuals with the appropriate skill-set will grow as employment opportunities for professionals expand rapidly in the private sector, non-governmental organizations, and local-state agencies (see description of how "proposed program supports...High Quality Credentials to Meet Economic Demand" below); 2) because this program revolves around important issues in metropolitan areas, we believe that there will be an

increased attraction from underrepresented minority populations from neighboring metropolitan areas and, thus, create a novel revenue stream for the College of ACES and UIUC; 3) the program will also take the educational experience outside of Urbana-Champaign and disseminate the knowledge to cities across Illinois through internships, outreach and extension and, thus, fulfill the land-grant mission of the university, and 4) this program will promote new connections between urban communities and constituencies with food and, thereby, increase the visibility of the impact the College of ACES has on these populations.

The interdisciplinary nature of the new program is developed across existing ACES departments

A food system relies on a complex interdependence of abiotic-biotic, economic, political, social and health systems. The academic disciplines of the seven departments within the College of ACES uniquely covers each of these main themes and, thus, creates a natural framework by which to develop an interdisciplinary major. The students will learn the components of a food system in Introduction to Food Systems (ACES 102). By taking the World Food Economy or The Global Food Web, students will have a foundation by which to compare and contrast a global vs. a local food system. They will learn what food is and what is needed to produce food through a combination of Chemistry I and II, and Introductory courses in Crop Sciences (CPSC 112) and Soils (NRES 201). Introduction to Natural Resources and Environmental Sciences (NRES 102) provides the students with an understanding of biogeochemical cycles, with a particular emphasis on the flow of chemical elements (e.g. carbon) through abiotic and biotic components as it relates to a food system and climate change. In addition to learning principles of plant production in the Introduction to Crop Sciences course, the students will gain additional production knowledge through Introduction to Animal Sciences (ANSC 100) and by choosing two additional plant or animal production courses. Exposure to current technologies used in food production, processing, distribution, and storage is also needed because major technological advancements in these areas are required if the food needs for a metropolitan population will ever be met locally. A key goal of a food system is to not just produce food, but to produce nutritious food. Thus, the students will learn what it means for a food to be nutritious and what type of nutrition is needed for humans to be healthy in Human Nutrition (FSHN 120 or 220). The decisions made in how food is produced, processed, distributed, and marketed is largely driven by economic principles and, thus, the students will learn about the economics of food, environmental resources, and consumer behavior in two Agricultural Economics courses (ACE 100 and 255). The students will be able to assess how food and infrastructure policies are designed to influence the operation of the food system by choosing two courses in policy, planning, or law. The interdependence between the food system and social ecology will be explored through coursework and an experiential learning activity (see additional details below about the Social Impact Learning Experience course) designed for the students to see the positive or negative social impacts of a food system firsthand.

Creation of new courses that define the relation between individual food system components and provides real-world experiences

A hallmark of this new program is the development of a unique series of Metropolitan

A hallmark of this new program is the development of a unique series of Metropolitan Food and Environmental Systems (MFST) courses that ensures student comprehension and application of the interdependence and interrelatedness of the food system components.

• Students will first be guided through a discovery-based course, MFST 101, that is designed for students to understand, apply, and analyze key principles of a food system by producing their own plant and animal foods, tasting the products of their produced foods, and taking part in the processing, retail and post-consumption operations. These hands-on experiences in their first semester allows the students to experiment with trial and error and provides the basis by which they can learn from their mistakes in later courses and understand the potential gaps between theory and practice.

• We have also developed a three part "plan-do-review" experiential learning series, MFST 301, 397, and 401, with the goal to immerse the students in an experience that encourages active, independent learning and reflection through direct involvement in a metropolitan food and environmental systems-related job. The students will go beyond just completing their experiential learning (MFST 397) and will actively participant in developing the objectives of their learning experience (MFST 301) and reflecting on their experience in multiple ways (MFST 401). Their reflection will include how to effectively communicate what they did and why it matters, how this job relates to other jobs in a food system, and how this job impacts the food system. An additional component of their review of the learning experience will be to use their on-the-job activity as the backbone for further discussions of professional development, including best practices in how to find, obtain, and maintain specific positions. Comparing and contrasting student experiences will allow the students to understand the practical application of the knowledge gained in their classes in a variety of metropolitan food and environmental systems-related jobs and expose students to the many available career opportunities.

• Because everyone requires food to survive, the students must learn that there are high stakes in ensuring that a food system meets the needs of a society. In MFST 450 Social Impact Learning Experience, students will directly participate in an organized service activity that meets community food needs so that the students can see firsthand the interdependence between the food system and social ecology. Both MFST 397 and 450 learning experiences can be completed through existing connections with UIUC Extension organizational ties in Illinois metropolitan regions and, thus, will foster learning partnerships that fulfill the mission of Extension.

• In each of the above MFST courses, the students will continue to build on their understanding of a metropolitan food system by reevaluating and redesigning their own diagram of a food system. This understanding will ultimately be tested in their capstone course, MFST 498, when they will have to develop their own Champaign-Urbana Food Policy.

Establish forward-thinking leaders in food systems

The agricultural infrastructure necessary for creating a metropolitan food system is non-existent both in university curricula and in city development. In order to fulfill this new need for metropolitan agriculture, we have formed a partnership with the Department of Urban and Regional Planning (UP) in order to provide a basis of

knowledge and skills by which future ideas can be implemented in this new infrastructure space. This currently includes many UP course offerings, but may expand to new jointly taught courses or experiential learning opportunities in the future (the Department of Urban and Regional Planning is included in the governance of the MFST program; see 1e). MFST students will be faced with immense challenges in educating constituencies and implementing large-scale development and policy changes to alter the current food system. We will prepare these students in how to be an effective leader and communicator by including leadership courses and "systems" writing reflections and multiple oral presentations in their MFST courses.

An education, a career, a movement
It is through this curriculum design that we believe we have fulfilled the challenge of creating an interdisciplinary program that has both breadth and depth of knowledge and skills. By providing a curriculum in which students can learn how to use the principles of ACES to solve the problems of food and environmental systems in metropolitan areas, this major will embrace the changing agricultural landscape from rural to urban and meet students where their interests and passions lie. The knowledge and skillsets necessary to traverse the complexity of a food system can only be offered through the unique combination of learning opportunities provided by the MFST major and not by any other combination of a major-minor or double-major. That said, development of the major was able to be done using mostly existing courses, minimizing the budgetary needs for establishing a new program. Additional MFST courses have been developed to ensure that the interrelatedness and interdependence of each of the students' area-specific courses is understood. Because of the interdisciplinary nature of this program, MFST will exist at the college level in the Academic Programs Office of ACES. This college-level undergraduate program arrangement is already being implemented with the Agricultural Education and Agricultural Communications programs and, thus, we have experience with the organization and staff necessary for implementing a program of this kind.

Is This a Teacher Certification Program?

No

Will specialized accreditation be sought for this program?

No

Institutional Context

University of Illinois at Urbana-Champaign

Describe the historical and university context of the program's development. Include a short summary of any existing program(s) upon which this program will be built.

Explain the nature and degree of overlap with existing programs and, if such overlap exists, document consultation with the impacted program's home department(s).

There is an enormous social and market demand for easily accessible, high quality foods produced in local (vs. global) settings in way that reduces the amount of energy, water, and transportation required to bring foods to the cities. In order to meet this demand, the infrastructure, policies, and businesses driving food systems will have to be re-imagined and designed to promote large-scale innovations in food supply, safety, and security. College of ACES will build on its reputation as the preeminent land-grant institution and educate the next generation of students across its seven departments to be leaders in this new space and drive economic development toward an environmentally sustainable food system where healthy food is accessible to all.

University of Illinois

Briefly describe how this program will support the University's mission, focus and/or current priorities. Demonstrate the program's consistency with and centrality to that mission.

The university's mission: "The University of Illinois at Urbana-Champaign is charged by our state to enhance the lives of citizens in Illinois, across the nation and around the world through our leadership in learning, discovery, engagement and economic development."
• This new program provides an opportunity for UIUC to become a leader in the quickly growing areas of metropolitan food security and sustainability, by offering the only integrated agricultural, consumer and environmental sciences undergraduate degree program that embraces the many necessary interdisciplinary fields.
• This degree program includes core curriculum in many of the key "areas of growing importance" to UIUC's mission, including Diversity, Energy and Sustainability, Food Security, Health Sciences, Public Engagement, Social and Behavioral Sciences.

The land-grant mission: "to promote the liberal and practical education of the industrial classes in the several pursuits of professions of life." We will fulfill this mission in the following ways:
• Students will take the educational experience outside of Urbana-Champaign and disseminate the knowledge to cities across Illinois through research, outreach or extension during their required experiential learning courses (MFST 397 and 450). Many faculty within ACES already promote the principles of MFST through their research in metropolitan areas, making research projects accessible to the students to complete the higher-learning objectives of their experiential activity. Alternatively, the students will complete their experiential learning projects through UIUC Extension programs. Extension has a footprint in major metropolitan areas, with Extension Educators working to promote local foods, urban food marketplaces, neighborhood gardening, vertical farming, rooftop water reclamation, and city soil testing, among many other activities. Collaborating with Illinois Extension and other food-related partners, such as restaurateurs, entrepreneurs, grocers, city farmers, health inspectors, non-profit and non-government organizations, etc., students will apply their systems thinking to real-world problems.
• This dissemination of knowledge to the metropolitan people can alter the practices in

all sectors of the food system (production, processing, distribution, consumerism, waste) and improve the lives of individuals in all classes.

The university's strategic plan, goal 1 (Foster scholarship, discovery and innovation), initiative (a), says: "align resources with academic and research units to capitalize on our scholarly synergies across campus."

• A land-grant institution such as the UIUC is uniquely equipped to develop the MFST major, by integrating our established expertise in the College of Agricultural, Consumer and Environmental Sciences (ACES). The College of ACES will draw from its strengths across its seven academic departments and train students across the physical, earth, life, engineering, social, and behavioral sciences and integrate the key concepts of systems theory to develop logical and critical thought leaders and professionals in areas critical to feeding individuals in metropolitan areas while maintaining the sustainability of our resources.

The university's strategic plan, goal 2 (Provide transformative learning experiences), initiative (b) says to re-envision and reshape the Illinois student experience. We fulfill this goal by:

• Defining new learning outcomes that contribute to solving 21st century challenges of global and local significance.

• We have designed a program that requires both experiential learning and a capstone course. We have made these integrative experiences broadly available to students through our collaboration with the College of ACES faculty and UIUC Extension, which allows for an easy transition for students into an experiential learning activity and to successfully complete their capstone course (Extension affiliates from different organizations within the food system will be invited to help the students complete their Champaign-Urbana Food Policy assignment for the capstone course).

• We enable the students to structure their education (non-major requirements, selection of choice requirements, and experiential learning) around one of the grand societal challenges defined by UIUC, including health (grand challenge "Health & Wellness"), social system (grand challenge "Inequality & Cultural Understanding), and energy and sustainability (grand challenge "Sustainability, Energy & the Environment).

• The integration of "classroom experiences, academic support, academic advising and mentoring, and co-curricular student experiences" will be performed by the program director, allowing for continuity in program messaging and building a one-on-one structure to the students' educational experience.

The university's strategic plan, goal 2 (Provide transformative learning experiences), initiative (d) says to enhance the accessibility to undergraduate programs and increase diversity within these programs.

• This interdisciplinary major will attract new students, primarily from metropolitan areas within and outside of Illinois, thereby meeting the University's goals of expanding the student population and reducing reliance on state financial support.

• Because this program revolves around important issues in metropolitan areas, food and sustainability, we believe that there will be an increased attraction from underrepresented minority populations from neighboring big cities. The inclusion of required experiential learning that can be completed in these big cities should also

incentivize students to participate as these experiences will involve their local communities in which they came from and/or will live in the future.

The university's strategic plan, goal 3 (Make a significant and visible societal impact), initiative (a) says: "Empower University of Illinois Extension to differentiate itself from other state extension networks by focusing on societal grand challenges… Develop our students to be future leaders with strong communication skills and who are engaged in their communities."

- The students are required to complete experiential learning activities in areas included as UIUC-defined grand challenges, including Health & Wellness, Inequality & Cultural Understanding, Sustainability, and Energy & the Environment. These activitiescan be completed through existing metropolitan community partners already established by UIUC Extension, extending the mission of Extension through student-community learning partnerships.
- As a part of the curricula, the students are required to take courses in leadership and communication and will be required to engage metropolitan communities with their experiential learning activities.

State of Illinois

Indicate which of the following goals of the Illinois Board of Higher Education's Strategic Initiative are supported by this program: (choose all that apply)

High Quality Credentials to Meet Economic Demand - Increase the number of high-quality post-secondary credentials to meet the demands of the economy and an increasingly global society.

Describe how the proposed program supports these goals.

Industry estimates show U.S. local food sales totaled at least $12 billion in 2014, up from $5 billion in 2008, and experts anticipate that value to hit $20 billion this year, as the value of local food sales is increasing (USDA Report to Congress, Trends in US local and regional food systems). The numbers also show that these opportunities are helping to drive job growth in agriculture. The USDA report, "Employment Opportunities for College Graduates in Food, Agriculture, Renewable Natural Resources, and the Environment," shows a tremendous demand for recent college graduates with a degree in agricultural programs with an estimated 57,900 high-skilled job openings annually in the food, agriculture, renewable natural resources, and environment fields in the US alone. With only an average of 35,400 new US graduates with a bachelor's degree or higher in agriculture related fields, we are 22,500 short of the jobs currently available annually. While most employers prefer to hire graduates of food, agriculture, renewable resources, and environment programs, graduates from these programs only fill about 60% of the expected annual openings. As the global and metropolitan populations continue to increase without a concomitant increase in food production, the need for skilled workers to solve the problem using a systems-based approach to ensure that we are maintaining food security, sustaining environmental resources and supporting human health will continue to increase. In fact, according to the Global Impact Investing Network's most recent survey, 63% of impact investors said they were putting their dollars into food and agriculture. This demand has driven the growth in this sector at an annual rate of 32.5% since 2013. In particular, there is a focus on placing capital in projects that scale up sustainable agriculture. All of these indicators point to great job employment outlook for graduates of MFST.

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 postbaccalaureate 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.

The College of ACES faculty and Extension have a footprint in all nodes of the food system in major metropolitan areas, including production, processing, distribution, consumerism, and waste. We expect that the networks can be used by MFST administration to place students into jobs within these organizations and for the students to directly build relationships with potential future employers through the student experiential learning projects.

Enrollment

Number of Students in Program (estimate)

Year One Estimate 25 5th Year Estimate (or when fully implemented)

100

Estimated Annual Number of Degrees Awarded

Year One Estimate 0 5th Year Estimate (or when fully implemented)

50

What is the matriculation term for this program?

Fall

Delivery Method

This program is available:

Face-to-Face

Budget

Will the program or revision require staffing (faculty, advisors, etc.) beyond what is currently available?

Yes

Please explain/describe:

Because the program will be administered within the College of ACES Academic Programs Office, the existing facilities and staff will be made available. Beyond these existing resources, a Director (100% FTE, non-TT), specialized faculty (50% FTE, non-TT), and graduate assistants (50% FTE) will be used for critical academic functions related to the program. The Director and specialized faculty will mange student advising, any on-campus recruitment responsibilities, teaching MFST courses, and any other responsibilities not handled by ACES Office of Academic Programs staff.

Additional Budget Information

The College of ACES received funding from UIUC's Investment for Growth Program to develop the MFST degree program and hire the Director, specialized faculty, and graduate teaching assistants. By 2022, the program is projected to be funded solely by tuition and instructional unit revenue.

Attach File(s) Organizational Chart.pdf

Resource Implications

Facilities

Will the program require new or additional facilities or significant improvements to already existing facilities?

No

Technology

Will the program need additional technology beyond what is currently available for the unit?

No

Non-Technical Resources

Will the program require additional supplies, services or equipment (non-technical)?

No

Resources

Faculty Resources

Please address the impact on faculty resources including any changes in numbers of faculty, class size, teaching loads, student-faculty ratios, etc. Describe how the unit will support student advising, including job placement and/or admission to advanced studies.

Most courses are already being taught across the departments in the College of ACES or across campus. With the addition of ~25 students per year and a number of class choices within the curriculum design, we do not project that this will burden any one class or another program (see Letters of Support from department and program heads). We are employing 5 teaching assistants to be allocated to the classes most affected by the increase in enrollment and to alleviate any additional teaching load to an individual faculty member. We will re-evaluate the admission and advising process if the demand exceeds capacity or if there is undue burden on faculty. If necessary, expansion of the classes will be done through the revenue generated from tuition. The Director, who is a 100%-time specialized faculty in MFST, with the assistance of future specialized faculty within the MFST program, will manage student advising and any on-campus recruitment responsibilities. Admissions will be handled by Cory Ohms, an Assistant Dean in the College of ACES Academic Programs Office. We expect most students will work with our existing network of agency connections through the College of ACES faculty and Extension to complete their experiential learning activities. These networks have an established footprint in all nodes of the food system in major metropolitan areas, including production, processing, distribution, consumerism, and waste. We expect that the networks can be used by MFST administration to place students into jobs within these organizations and for the students to directly build relationships with potential future employers through the student experiential learning projects.

Library Resources

Describe your proposal's impact on the University Library's resources, collections, and services. If necessary please consult with the appropriate disciplinary specialist within the University Library.

There should be no additional resources needed for the library. A letter from the University Librarian is added in the attached "Letters of Support".

Instructional Resources

Will there be any reduction in other course offerings, programs or concentrations by your department as a result of this new program/proposed change?

No

Does this new program/proposed change result in the replacement of another program?

No

Does the program include other courses/subjects impacted by the creation/revision of this program?

Yes

Required courses

Explain how the inclusion or removal of the courses/subjects listed above impacts the offering departments.

In addition to the College of ACES departmental courses required to fulfill the core curriculum, students will also be required to take two courses offered by the Department of Urban & Regional Planning - one lower and one upper level course that the student chooses from the list provided in the curriculum (see courses listed under "Urban Planning I and Urban Planning II" in the attached MFST Curriculum).
Most courses required for this major are already being taught across the departments in the College of ACES or across campus (see attached "MFST Curriculum"). With the addition of ~25 students per year and a number of class choices within the curriculum design, we do not project that this will burden any one class or another program. We are employing 5 teaching assistants to be allocated to the classes most affected by the increase in enrollment and to alleviate any additional teaching load to an individual faculty member. We will re-evaluate the admission and advising process if the demand exceeds capacity or if there is undue burden on faculty. If necessary, expansion of the classes will be done through the revenue generated from tuition.
This interdisciplinary curriculum design using mostly existing departmental courses requires an interdisciplinary governing council. Upon counsel with the heads of MFST-associated departments, the Dean of Academic Programs will appoint a mixture of faculty members from the representative units involved in the program to form an

interdisciplinary MFST Coordinating Committee for decision-making purposes. An external advisory committee composed of stakeholders in the metropolitan food system will also be selected by the College of ACES Dean and will provide input to the Coordinating Committee of MFST. These stakeholders include individuals in industry (eg. food producers, processors, distributors, and waste management) government (eg. local, state, national, or international officials involved in food policy, infrastructure, and management), non-governmental organizations (eg. non-profits involved research/educational advancements in the food system or in food justice and improving food access), and educational institutions (eg. administrators from high schools and/or other universities). The Course and Curriculum Committee that established this proposal and will continue to decide future curriculum decisions consists of the Director of MFST, the Associate Dean and Director of Extension, the Head of the Department of Natural Resources and Environmental Sciences, and the Interim Associate Dean of ACES Academic Programs.
There is also a designated reporting process for the this program. Each semester, the Director of MFST will compile a list of faculty who taught courses related to the program (and the IUs associated with MFST registered students), faculty who accepted MFST students to work in their laboratories, and any university member that accepted MFST students for experiential learning opportunities. The Director of MFST will circulate this to the department heads and additional college administrators. These data will be made available to department executive officers to be included in the individual university member's promotion and tenure documents.

Attach letters of support from other departments.	Letters of Support.pdf Chemistry.pdf Rhetoric.pdf MFST Curriculum.pdf

Financial Resources

How does the unit intend to financially support this proposal?

The College of ACES received funding from UIUC's Investment for Growth Program to develop and initiate the MFST degree program (see attached Budget). By 2022, the program is projected to be funded solely by tuition and instructional unit revenue. Several proposed courses currently exist, and will continue to be housed outside of the MFST rubric, which will provide helpful revenue to these participating units (see attached Letter of Support). Since ACES expects ~25 students enrolled per class year for several years, we do not expect MFST students to be an enrollment burden for these units.

Will the unit need to seek campus or other external resources?

No

Attach letters of support

Budget.xlsx

Will an existing tuition rate be used or continue to be used for this program?

Yes

Market Demand

What market indicators are driving this proposal? If similar programs exist in the state, describe how this program offers a unique opportunity for students:

Industry estimates show U.S. local food sales totaled at least $12 billion in 2014, up from $5 billion in 2008, and experts anticipate that value to hit $20 billion this year, as the value of local food sales is increasing (USDA Report to Congress, Trends in US local and regional food systems). The numbers also show that these opportunities are helping to drive job growth in agriculture. The USDA report, "Employment Opportunities for College Graduates in Food, Agriculture, Renewable Natural Resources, and the Environment," shows a tremendous demand for recent college graduates with a degree in agricultural programs with an estimated 57,900 high-skilled job openings annually in the food, agriculture, renewable natural resources, and environment fields in the US alone. With only an average of 35,400 new US graduates with a bachelor's degree or higher in agriculture related fields, we are 22,500 short of the jobs currently available annually. While most employers prefer to hire graduates of food, agriculture, renewable resources, and environment programs, graduates from these programs only fill about 60% of the expected annual openings. As the global and metropolitan populations continue to increase without a concomitant increase in food production, the need for skilled workers to solve the problem using a systems-based approach to ensure that we are maintaining food security, sustaining environmental resources and supporting human health will continue to increase. In fact, according to the Global Impact Investing Network's most recent survey, 63% of impact investors said they were putting their dollars into food and agriculture. This demand has driven the growth in this sector at an annual rate of 32.5% since 2013. In particular, there is a focus on placing capital in projects that scale up sustainable agriculture. All of these indicators point to great job employment outlook for graduates of MFST.

A unique opportunity for students who will major in MFST.
The social and market demands are driving the increase in jobs, but the students that will fill these jobs may be coming from two opposite ends of the spectrum of society. In communities with economic prosperity, you see an increase in people who are interested in food not out of hunger, but due to an interest in particular types of foods (i.e. a foodie, gastronome) or to increase environmental sustainability by changing laws and policies governing food production. In low income communities, food access and security remain key issues. Students with either prospective may be interested in entering the food system, but may have thought that pursuing academic majors in biology or government were the only avenues by which to make a change in the current food system. The MFST interdisciplinary program will encompass the interests of both subsets of students and bridge the gaps in knowledge in how these interests

are components of a bigger food system. We intend to use this lack of understanding in what a food system is as an opportunity to educate and recruit new populations of students that are not currently enrolled at UIUC. We are also targeting the 23% of incoming first year students that are undecided and start their academic career in the Division of General Studies. Because issues related to the food system are important to all people, spans disciplines and jobs, and the career prospects are increasing, we believe that this major will attract many new and undecided students. Other UIUC departments on campus that normally cover disciplines like biology or government do not focus on food systems and, thus, there should be no overlap in the prospective student populations between these existing departments and the new MFST program.

What type of employment outlook should these graduates expect? Explain how the program will meet the needs of regional and state employers, including any state agencies, industries, research centers, or other educational institutions that expressly encourage the program's development.

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 postbaccalaureate 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.

What resources will be provided to assist students with job placement?

The College of ACES faculty and Extension have a footprint in all nodes of the food system in major metropolitan areas, including production, processing, distribution, consumerism, and waste. We expect that the networks can be used by MFST administration to place students into jobs within these organizations and for the students to directly build relationships with potential future employers through the student experiential learning projects.

If letters of support are available attach them here:

Program Regulation

Describe how the program is aligned with or meets licensure, certification, and/or entitlement requirements, if applicable.

Briefly describe the plan to assess and improve student learning, including the program's learning objectives; when, how, and where these learning objectives will be assessed; what metrics will be used to signify student's achievement of the stated learning objectives; and the process to ensure assessment results are used to improve student learning.

N/A

Is the career/profession for graduates of this program regulated by the State of Illinois?

No

Program of Study

"Baccalaureate degree requires at least 120 semester credit hours or 180 quarter credit hours and at least 40 semester credit hours (60 quarter credit hours) in upper division courses" (source: https://www.ibhe.org/assets/files/PrivateAdminRules2017.pdf). For proposals for new bachelor's degrees, if this minimum is not explicitly met by specifically-required 300- and/or 400-level courses, please provide information on how the upper-division hours requirement will be satisfied.

All proposals must attach the new or revised version of the Academic Catalog program of study entry. Contact your college office if you have questions.

For new programs, attach Program of Study	PROGRAM OF STUDY.pdf

Catalog Page Text

Catalog Page Text: Description of program for the catalog page. This is not official content, it is used to help build the catalog pages for the program. Can be edited in the catalog by the college or department.

Megan Dailey, Ph.D., Director
215 Mumford Hall
1301 W. Gregory Dr., Urbana
PH: (217) 244-5567
mdailey5@illinois.edu

The Metropolitan Food and 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.

Statement for Programs of Study Catalog

Prescribed Courses including Campus General Education

Course List

Code	Title	Hours
Composition I		4-6
RHET 105	Writing and Research	
Advanced Composition		3
AGED 230	Leadership Communications	
Cultural Studies		9
AGED 340	Leadership Ethics & Pluralism (U.S. Minority)	

Code	Title	Hours
ACE 251	The World Food Economy (Non-Western)	
or CPSC 116	The Global Food Production Web	
Western - select one course from campus approved list		
Humanities & the Arts		6
TSM 311	Humanity in the Food Web	
Select one course from campus approved list		
Natural Science and Technology		8
CHEM 102	General Chemistry I	
& CHEM 103	and General Chemistry Lab I	
CHEM 104	General Chemistry II	
& CHEM 105	and General Chemistry Lab II	
Quantitative Reasoning I		3-5
Select one course from campus approved list		
Quantitative Reasoning II		3-4
ACE 261	Applied Statistical Methods	
or CPSC 241	Intro to Applied Statistics	
Social & Behavioral Sciences		6
ACE 100	Agr Cons and Resource Econ	4
ACE 255	Economics of Food and Environmental Justice	3

Core Curriculum

Course List

Code	Title	Hours
Required Introductory Courses		6-8
ACES 101	Contemporary Issues in ACES	2
or ACES 200	ACES Transfer Orientation	
ACES 102	Intro Sustainable Food Systems	3
MFST 101	Experiencing Food Systems	3
Understanding Abiotic-Biotic Interactions Necessary for Food		14-15
ANSC 100	Intro to Animal Sciences	4
CPSC 112	Introduction to Crop Sciences	4
or HORT 100	Introduction to Horticulture	
NRES 102	Introduction to NRES	3
NRES 201	Introductory Soils	4
FSHN 120	Contemporary Nutrition	3
or FSHN 220	Principles of Nutrition	
Economic I and II		7
ACE 100	Agr Cons and Resource Econ (fulfills SBS requirement)	4
ACE 255	Economics of Food and Environmental Justice (fulfills SBS requirement)	3
Food Production I and II - Choose two from the following list:		5-8
ANSC 301	Food Animal Production, Management, and Evaluation	
ANSC 309	Meat Production and Marketing (If you take ANSC 309, you must take a 4-hour upper-level course here or from another list)	
ANSC 400	Dairy Herd Management	
ANSC 401	Beef Production	
ANSC 402	Sheep Production	

Code	Title	Hours
ANSC 403	Pork Production	
ANSC 404	Poultry Science	
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	
HORT 466	Growth and Dev of Hort Crops	
NRES 488	Soil Fertility and Fertilizers	
Urban Planning - 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	

Code	Title	Hours
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 340	Environ Social Sci Res Meth	
NRES 427	Modeling Natural Resources	
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

Code	Title	Hours
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
AGED 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
MFST 498	Metropolitan Food & Environmental Systems Capstone	3
Total hours		127

EPC Documentation

Attach Rollback/Approval Notices	Response to EP edits needed for proposal.docx

DMI Documentation

Attach Final Approval Notices	EP edits needed for proposal.pdf
Attached Document	
Justification for this request	
Program Reviewer Comments	

Deb Forgacs (dforgacs) (07/18/19 11:31 am): Rollback: Update of Interdisciplinary departments.
Deb Forgacs (dforgacs) (07/18/19 1:52 pm): Rollback: interdisciplinary?
Kathy Martensen (kmartens) (07/24/19 10:21 am): Edits made by unit were to change the structure for the POS to match format for other ACES majors and to update required subjects from other depts. to pull out gen ed. Updated pending workflow to bring back to Senate EPC.
Barbara Lehman (bjlehman) (09/25/19 8:53 am): Rollback: These are edits needed as discussed at the Educational Policy Committee meeting on 9/23/19
Anna Ball (aball) (09/30/19 8:19 am): Rollback: Rolling back for the Ed Pol edits to be made.

Anna Ball (aball) (09/30/19 10:41 am): Rollback: Sorry, I thought I rolled this back, per my earlier comment, but it's still showing up in my list.

Deb Forgacs (dforgacs) (09/30/19 4:38 pm): Rollback: for addressing the EPC questions/comments.

Key: 777

UNIVERSITY OF ILLINOIS
AT URBANA-CHAMPAIGN

College of Agricultural, Consumer
and Environmental Sciences

Academic Programs
128 Mumford Hall, MC-710
1301 West Gregory Drive
Urbana, IL 61801

May 8, 2019

Kathy Martensen, Assistant Provost
Office of the Provost
207 Swanlund Administration Building
Campus MC-304

Dear Kathy:

The ACES Courses and Curricula Committee, on behalf of the Faculty of ACES, has voted to approve the following proposal:

Establish a new major in Metropolitan Food and Environmental Systems, leading to the degree of Bachelor of Science in the College of Agricultural, Consumer and Environmental Sciences.

Please address all correspondence concerning this proposal to Dr. Tony Yannarell (***acy-ann@illinois.edu***). The proposal is now ready for review by the Senate Educational Policy Committee for proposed implementation in Fall 2019.

Thank you for your consideration. I look forward to receiving your reply.

Sincerely,

David M. Rosch
Interim Associate Dean
ACES Academic Programs

DMR/rhc

cc: M. J. Dailey
J. L. Hardesty
A. C. Yannarell
ACES C&C Binder

ILLINOIS

COLLEGE OF AGRICULTURAL, CONSUMER AND ENVIRONMENTAL SCIENCES

Department of Agricultural & Biological Engineering
338 Agriculture Engineering Sciences Building, MC-644
1304 W. Pennsylvania Ave.
Urbana, IL 61801

February 27, 2019

David M. Rosch
Interim Associate Dean
Office of Academic Programs
College of Agricultural, Consumer and
Environmental Sciences
125 Mumford Hall
1301 W. Gregory Dr.
Urbana, Il 61801

Dear Professor Rosch,

I am pleased to let you know that the faculty in the Department of Agricultural and Biological Engineering (ABE) enthusiastically approve the Metropolitan Food and Environmental Systems (MetroFESt) proposal that we have been jointly working on and fully support. We have evaluated our current course offerings and how they might be affected by the influx of the anticipated MetroFESt majors and do not anticipate any problems in ensuring that they will have access.

Thank you for including ABE in this proposal.

Sincerely,

Alan Hansen

Alan C. Hansen
Professor and Interim Head

ILLINOIS

COLLEGE OF AGRICULTURAL, CONSUMER AND ENVIRONMENTAL SCIENCES

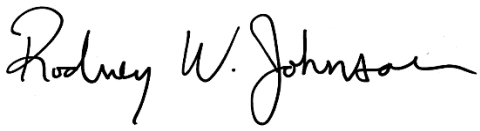
Department of Animal Sciences
110 Animal Sciences Laboratory, MC-630
1207 W. Gregory Drive
Urbana, IL 61801

February 25, 2019

Dear Professor David Rosch,

I am pleased to let you know that the Department of Animal Sciences enthusiastically approve the Metropolitan Food and Environmental Systems (MetroFESt) proposal. We have evaluated our current course offerings and how they might be affected by the influx of the anticipated MetroFESt majors and do not anticipate any problems in ensuring that they will have access. Moreover, the impact on course enrollments should be minimal, as these majors will represent only a small fraction relative to the current size of those courses. We also believe that the math, statistics, and many natural science courses that the MetroFESt students are required to take will properly prepare them for many of the higher-level Animal Sciences courses even without the listed prerequisites.

Sincerely,



Rodney W. Johnson, Ph.D.
Professor and Head, Department of Animal Sciences
University of Illinois
Urbana, IL 61801

ILLINOIS

COLLEGE OF AGRICULTURAL, CONSUMER AND ENVIRONMENTAL SCIENCES

Department of Agricultural & Consumer Economics
326 Mumford Hall, MC-710
1301 W. Gregory Drive
Urbana, IL 61801

February 26, 2019

David M. Rosch
Interim Associate Dean
Office of Academic Programs
College of Agriculture, Consumer and
Environmental Sciences
125 Mumford Hall
1301 W. Gregory Dr.
Urbana, Il 61801

Dear Professor David Rosch,

I am pleased to let you know that the faculty in the Department of Agricultural and Consumer Economics enthusiastically approve the Metropolitan Food and Environmental Systems (MetroFESt) proposal. We have evaluated our current course offerings and how they might be affected by the influx of the anticipated MetroFESt majors and do not anticipate any problems in ensuring that they will have access. Of note, we will soon be expanding our departmental course offerings to include an ACE Intermediate Microeconomics Theory course to replace the ECON 302 prerequisite for a few of the upper level courses included in the MetroFESt curriculum. We look forward to having this new course be included as a choice for the Advanced Scientific Literacy requirement for MetroFESt students. This change should occur prior to the anticipated MetroFESt program start date.

Sincerely,

John A. (Sean) Fox
Professor and Head
Agricultural and Consumer Economics

ILLINOIS

Agricultural Education Program

College of Agricultural, Consumer and Environmental Sciences
905 S. Goodwin Avenue
174 Bevier Hall
Urbana, IL 61801

February 26, 2019

Anna Dilger, Ph.D.
Interim Associate Dean
Office of Academic Programs, College of ACES

Dear Professor Dilger,

On behalf of the Agricultural Education Program, I am pleased to write this letter to express our approval of the Metropolitan Food and Environmental Systems (MetroFESt) proposal that we have been consulting with you on and that we give our support. We have evaluated our current course offerings in AGED 230 and AGED 260 and how they might be affected by the influx of the anticipated MetroFESt majors. We do not anticipate any problems in ensuring that these students will have access. Moreover, the impact on course enrollments should be minimal, as these majors will represent only a small fraction relative to the current size of these courses.

Sincerely,

David M. Rosch, Ph.D.
Associate Professor and Acting Director

ILLINOIS

COLLEGE OF AGRICULTURAL, CONSUMER AND ENVIRONMENTAL SCIENCES

Department of Crop Sciences
AW-101 Turner Hall, MC-046
1102 S. Goodwin Ave.
Urbana, IL 61801-4730

February 25, 2019

Dr. David M. Rosch
Interim Associate Dean
Office of Academic Programs
College of Agriculture, Consumer and
Environmental Sciences
125 Mumford Hall
1301 W. Gregory Dr.
Urbana, Il 61801

Dear Dr. Rosch,

I am pleased to let you know that the faculty in the Department of Crop Sciences enthusiastically approve the Metropolitan Food and Environmental Systems (MetroFESt) proposal. We have evaluated our current course offerings and how they might be affected by the influx of the anticipated MetroFESt majors and do not anticipate any problems in ensuring that they will have access.

Sincerely,

Adam Davis

Professor and Head
Department of Crop Sciences
University of Illinois

ILLINOIS

COLLEGE OF AGRICULTURAL, CONSUMER & ENVIRONMENTAL SCIENCES

Department of Food Science & Human Nutrition
260 Bevier Hall, MC-182
905 S. Goodwin Ave.
Urbana, IL 61801

February 25, 2019

David M. Rosch, Ph.D.
Interim Associate Dean
Office of Academic Programs, College of ACES

Dear Professor David Rosch,

On behalf of the Department of Food Science and Human Nutrition I am pleased to write this letter to express our approval of the Metropolitan Food and Environmental Systems (MetroFESt) proposal that we have been consulting with you on and that we give our support. We have evaluated our current course offerings and how they might be affected by the influx of the anticipated MetroFESt majors and do not anticipate any problems in ensuring that they will have access. Moreover, the impact on course enrollments should be minimal, as these majors will represent only a small fraction relative to the current size of these courses.

Sincerely,

Nicki J. Engeseth, Ph.D.
Professor and Acting Department Head

ILLINOIS

COLLEGE OF AGRICULTURAL, CONSUMER & ENVIRONMENTAL SCIENCES

Department of Human Development & Family Studies
222 Bevier Hall, MC-180
905 S. Goodwin Ave.
Urbana, IL 61801

February 27, 2019

David Rosch, Ph.D.
Interim Associate Dean of Academic Programs in ACES
128 Mumford Hall
Urbana, IL 61801

Dear Professor David Rosch,

I am pleased to let you know that the faculty in the Department of Human Development and Family Studies enthusiastically approve the Metropolitan Food and Environmental Systems (MetroFESt) proposal. We have evaluated our current course offerings and how they might be affected by the influx of the anticipated MetroFESt majors. Our finding is that there is room for MetroFESt students; we do not anticipate any problems with their enrollment

Sincerely,

Ramona Faith Oswald, Ph.D.
Professor and Interim Head

Sincerely,

Ramona Faith Oswald, Ph.D.
Professor & Interim Department Head

ILLINOIS

COLLEGE OF AGRICULTURAL, CONSUMER & ENVIRONMENTAL SCIENCES

Department of Natural Resources and Environmental Sciences
W-503 Turner Hall, MC-047
1102 S. Goodwin Ave.
Urbana, IL 61801-4730

February 22, 2019

Dr. David Rosch
Interim Associate Dean of Academic Programs
College of ACES

Dear Dr. Rosch:

I am pleased to let you know that the faculty in the Department of Natural Resources and Environmental Sciences enthusiastically approve the Metropolitan Food and Environmental Systems (MetroFESt) proposal that we have been jointly working on and fully support. We have evaluated our current course offerings and how they might be affected by the influx of the anticipated MetroFESt students, and do not anticipate any problems in ensuring that they will have access to NRES classes. In fact, we will welcome them! Please note that we are also changing our prerequisite requirement for NRES 201 to allow MATH 124 or its equivalent rather than calculus only.

Sincerely,

Jeffrey D. Brawn
Professor and Head
Department of Natural Resources and Environmental Sciences

ILLINOIS

COLLEGE OF FINE & APPLIED ARTS

Department of Urban and Regional Planning
111 Temple Hoyne Buell Hall, MC-619
611 East Lorado Taft Drive
Champaign, IL 61820-6921

David M. Rosch
Interim Associate Dean
Office of Academic Programs
College of Agriculture, Consumer and
Environmental Sciences
125 Mumford Hall
1301 W. Gregory Dr.
Urbana, IL 61801

By email to dmrosch@illinois.edu

Dear Professor Rosch:

I am pleased to inform you that the Department of Urban and Regional Planning approves the Metropolitan Food and Environmental Systems (MetroFESt) proposal. Based on the many overlaps in interest outlined in the proposal, we think that this is a very natural fit and an excellent opportunity for MetroFESt and Urban and Regional Planning, as well as for future students whose interests align with this interdisciplinary program.

Please contact me at 217-300-8178 or rpendall@illinois.edu if you have questions.

Thank you,

Rolf Pendall, Professor and Head

UNIVERSITY OF ILLINOIS
AT URBANA-CHAMPAIGN

University Library
1408 West Gregory Drive
Urbana, IL 61801

February 25, 2019

David Rosch
Interim Associate Dean
College ACES
125 Mumford Hall
1301 W. Gregory Dr.
Urbana, IL 61801

Dear Dr. Rosch:

The University Library recently received a proposal from you outlining the College of ACES' plans to establish a Bachelor of Science degree program in Metropolitan Food and Environmental Systems (MetroFESt).

Based upon the documents received and reviewed by Sarah Williams, Melody Allison, and Erin Kerby in the Funk ACES and Veterinary Medicine libraries, it is our belief that there will be no significant impact on the University Library. We are already supporting most of the courses through existing resource allocations and see no meaningful changes in our operations resulting from this proposal.

If additional services or materials are required as the programs further develop, we will be happy to discuss those needs as they emerge.

Sincerely,

John Wilkin
Juanita J. and Robert E. Simpson Dean of Libraries and University Librarian

e-cc: Melody Allison
Megean Dailey, Director of Metropolitan Food and Environmental Systems
Erin Kerby
Mary Lowry, Assistant Dean for Student Success, College of ACES
Thomas Teper
Sarah Williams

From: Dailey, Megan J
To: Martensen, Kathy
Subject: Fw: A new ACES program requiring RHET 105
Date: Thursday, May 23, 2019 1:19:01 PM

Kathy,

Here is the forwarded message from the Director of Rhetoric. After further discussion with the C&C for MFST, we decided that RHET 105 would still be the best course to take and falls in line with other ACES department requirements.

Megan

Megan J. Dailey, Ph.D
Director of Metropolitan Food
and Environmental Systems
University of Illinois at Urbana-Champaign
1301 W. Gregory Drive
Urbana, IL 61801
(217) 244-5567
mdailey5@illinois.edu

From: McDuffie, Kristi
Sent: Saturday, March 2, 2019 8:41 PM
To: Dailey, Megan J; Mahaffey, Vicki
Subject: RE: A new ACES program requiring RHET 105

Hi Megan,
Thanks for your patience in my reply – I have been traveling.
There is no problem with this number of students. I just want to give you some information so you can better understand the Composition I requirement as it informs your proposal.
Rhet 105 is just one option to fulfill the Comp I requirement at UIUC. It is the most-used option, but it is better to write "Composition I" as the requirement. Some students need to take ESL Writing or the Rhet 101-102 sequence depending on certain test scores. Please also note that students who do place into Rhet 105 are split between fall and spring semesters depending on their UINs.
I've attached an advising information sheet which may help. This has placement information for Fall 2018, and you would need to use placement information for Fall 2019 (which will be solidified by the end of April 2019). But it may help. And you probably don't need all this detail for your proposal. I have just been running into a lot of issues because students think that they have to take Rhet 105 when Rhet 101-102 and certain ESL classes also fulfill the Comp I requirement.
Let me know if you have any questions!
Kristi

Kristi McDuffie, Ph.D.

Interim Director of Rhetoric
University of Illinois at Urbana-Champaign
kmcduff@illinois.edu
217-300-1478

From: Dailey, Megan J <mdailey5@illinois.edu>
Sent: Friday, February 22, 2019 3:27 PM
To: Mahaffey, Vicki <vmahaffe@illinois.edu>
Cc: McDuffie, Kristi <kmcduff@illinois.edu>
Subject: Re: A new ACES program requiring RHET 105

Vicki and Kristi,

Thank you so much and I greatly appreciate your help.

Megan

Megan J. Dailey, Ph.D
Director of Metropolitan Food
and Environmental Systems
University of Illinois at Urbana-Champaign
1301 W. Gregory Drive
Urbana, IL 61801
(217) 244-5567
mdailey5@illinois.edu

From: Mahaffey, Vicki
Sent: Friday, February 22, 2019 3:15:46 PM
To: Dailey, Megan J
Cc: McDuffie, Kristi
Subject: Re: A new ACES program requiring RHET 105

Dear Megan,

I am copying the Director of Rhetoric, Kristi McDuffie, on this email. We will get together and talk about this and get back to you soon.

Thank you,
Vicki

Vicki Mahaffey
Head and Kirkpatrick Professor of English
University of Illinois, Urbana-Champaign
608 S. Wright St.
Urbana, IL 61801
217-333-2391

From: "Dailey, Megan J" <mdailey5@illinois.edu>
Date: Friday, February 22, 2019 at 2:05 PM
To: "Mahaffey, Vicki" <vmahaffe@illinois.edu>
Subject: A new ACES program requiring RHET 105

Dr. Vicki Mahaffey,

The College of Agriculture, Consumer and Environmental Sciences is developing a new interdisciplinary major in Metropolitan Food and Environmental Systems. As a part of the new curriculum for this program, we would like to require the students to take RHET 105. We expect to have an influx of ~25 new students per year beginning in the fall of 2020, if all goes well with the college and Senate approvals. You would, of course, receive the IUs for the registered students, but we are asking if this would put undue hardship on the existing faculty/infrastructure for RHET 105. I have attached the Senate Proposal and have highlighted the RHET requirement on pg 12, in case you need to review this before replying. We just wanted to cover all of our bases before we proceed with future university approvals for this program. I greatly appreciate your consideration in this matter. Thank you so much.

Megan

Megan J. Dailey, Ph.D
Director of Metropolitan Food
and Environmental Systems
University of Illinois at Urbana-Champaign
1301 W. Gregory Drive
Urbana, IL 61801
(217) 244-5567
mdailey5@illinois.edu

From: Christian Ray <crray@illinois.edu>
Sent: Tuesday, May 21, 2019 9:11 PM
To: Gruebele, Martin H W
Cc: Dailey, Megan J
Subject: Re: A new ACES program requiring introductory CHEM series

Dear Megan,

To echo Martin's comment: this looks like a really great program!

If students in this program follow the proposed course schedule (Chem 102/103 in the first semester, Chem 104/105 in the second semester) we will have no problem accommodating an additional 25 students. If a large percentage of these students need to take Chem 101 in the first semester we would be adding more students to a class that we are already struggling to staff. Do you have a sense of what percentage of students you expect to start in Chem 101 vs Chem 102?

I don't think this is a deal breaker, but we need to understand how the enrollment of Chem 101 might be impacted as we are seeing a great deal of growth in the class.

Please let me know when you can.

Best,

Christian

On Tue, May 21, 2019 at 5:20 PM Gruebele, Martin H W <mgruebel@illinois.edu> wrote:
Megan,

Thank for connecting with us about it - It looks like a great Major! I CC Prof. Christian Ray, the Director of General Chemistry in charge of the teaching faculty who teach these courses (and he teaches 104 himself).
I think we can handle it, although it increases stress because our IU/faculty ratio is well over 1000. However, I will let Christian reply with more details. We certainly should make the college aware of additional TA needs, as the number of students is ca. one TA section.

Cheers,
Martin

On May 21, 2019, at 16:41, Dailey, Megan J <mdailey5@illinois.edu> wrote:

Dr. Martin Gruebele,

The College of Agriculture, Consumer and Environmental Sciences is developing a new interdisciplinary major in Metropolitan Food and Environmental Systems. As a part of the new curriculum for this program, we would like to require the students to take CHEM 102, 103, 104, and 105. We expect to have an influx of ~25 new students per year beginning in the fall of 2020, if all goes well with the Senate approvals. You would, of course, receive the IUs for the registered students, but we are asking if this would put undue hardship on the existing faculty/infrastructure for these introductory CHEM courses. I have attached the Senate Proposal and have highlighted the CHEM requirement on pg 14, in case you need to review this before replying. We just wanted to cover all of our bases before we proceed with future university approvals for this program. I greatly appreciate your consideration in this matter. Thank you so much.

Megan

Megan J. Dailey, Ph.D
Director of Metropolitan Food
and Environmental Systems
University of Illinois at Urbana-Champaign
1301 W. Gregory Drive
Urbana, IL 61801
(217) 244-5567
mdailey5@illinois.edu
<MFST Senate Proposal CHEM.docx>

STATEMENT FOR PROGRAMS OF STUDY CATALOG:

Megan Dailey, Ph.D., Director
215 Mumford Hall
1301 W. Gregory Dr., Urbana
PH: (217) 244-5567
mdailey5@illinois.edu

The Metropolitan Food and 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 postbaccalaureate 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.

GENERAL EDUCATION REQUIREMENTS

Composition I			**4hrs**
RHET 105	Writing and Research	4hrs	
Advanced Composition			**3hrs**
AGED 230	Leadership Communication	3hrs	
Cultural Studies			**9hrs**
AGED 340 (US Minority) ACE 251 or CPSC 116 (Non-Western) Western	Leadership Ethics & Pluralism (US Minority) World Food Economy or The Global Food Web Select from campus approved list	3hrs 3hrs 3hrs	
Humanities & the Arts			**6hrs**
TSM 311 Select from campus approved list	Humanity in the Food Web Select from campus approved list	3hrs 3hrs	
Natural Science and Technology			**8hrs**
CHEM 102 & 103 CHEM 104 & 105	General Chemistry I General Chemistry II	4hrs 4hrs	
Quantitative Reasoning I			**3-5hrs**
Select from campus approved mathematics courses			
Quantitative Reasoning II			**3-4hrs**
Select from one of the following: ACE 261 CPSC 241	 Applied Statistical Methods Intro to Applied Statistics		
Social & Behavioral Sciences			**6hrs**
This requirement is met by the MFST core curriculum			

CORE CURRICULUM

Required Introductory Courses			**6-8hrs**
ACES 101 or ACES 200 ACES 102 MFST 101	Contemporary Issues in ACES/ACES Tr Orient Introduction to Food Systems Experiencing Food Systems	0-2hrs 3hrs 3hrs	
Understanding Abiotic-Biotic Interactions Necessary for Food			**14-15hrs**
NRES 102 CPSC 112 or HORT 100 ANSC 100 NRES 201	Introduction to NRES Intro to Crop Sciences or Intro to Horticulture Introduction to Animal Sciences Introduction to Soils	3hrs 3-4hrs 4hrs 4hrs	
Human Nutrition (choose one from the following list)			**3-4hrs**
FSHN 120 FSHN 220	Contemporary Nutrition Principles of Nutrition	3hrs 4hrs	
Economic I and II			**7hrs**
ACE 100 *(fulfills SBS requirement)* ACE 255 *(fulfills SBS requirement)*	Agriculture, Consumer & Resource Economics Economics of Food and Environmental Justice	4hrs 3hrs	
Food Production I and II (choose two from the following list)			**5-8hrs**

HORT 341	Greenhouse Mgmt and Production	4hrs	
HORT 360	Vegetable Crop Production	3hrs	
HORT 421	Horticulture Physiology	4hrs	
HORT 435	Urban Food Production	3hrs	
HORT 466	Growth & Dev of Hort Crops	4hrs	
CPSC 418	Crop Growth and Mgmt	3hrs	
CPSC 437	Agroecology	3hrs	
NRES 488	Soil Fertility and Fertilizers	3hrs	
ANSC 301	Food Animal Production, Mgmt & Eval	3hrs	
ANSC 309	Meat Production and Marketing *(if you take ANSC 309, you must take a 4hr upper level course here or from another list)*	2hrs	
ANSC 400	Dairy Herd Mgmt	3hrs	
ANSC 401	Beef Production	3hrs	
ANSC 402	Sheep Production	3hrs	
ANSC 403	Pork Production	3hrs	
ANSC 404	Poultry Science	3hrs	
Urban Planning I (choose one from the following list)			**3hrs**
UP 101	Intro to City Planning	3hrs	
UP 116	Urban Informatics I	3hrs	
UP 136	Urban Sustainability	3hrs	
UP 203	Cities: Planning & Urban Life	3hrs	
UP 204	Chicago: Planning & Urban Life	3hrs	
UP 205	Ecology & Environmental Sustainability	3hrs	
UP 260	Social Inequality and Planning	3hrs	
Urban Planning II (choose one from the following list)			**3-4hrs**
UP 330	The Modern American City	3hrs	
UP 340	Planning for Healthy Cities	3hrs	
UP 345	Economic Development Planning	3hrs	
UP 405	Watershed Ecology and Planning	4hrs	
UP 406	Urban Ecology	4hrs	
UP 473	Housing & Urban Planning	3hrs	
UP 475	Real Estate Development Fundamentals	3hrs	
Policy I (choose one from the following list)			**3hrs**
ACE 199	Food Ag & Pol	3hrs	
ACE 291	Ag Policy & Leadership	3hrs	
ACE 292	Farm, Food & Env Policy	3hrs	
UP 211	Local Planning, Gov't and Law	3hrs	
Policy II (choose one from the following list)			**3-4hrs**
ACE 306	Food Law	3hrs	
ACE 403	Agricultural Law	3hrs	
ACE 406	Environmental Law	3hrs	
ACE 410	Energy Economics	3hrs	
ACE 411	Environment and Development	3hrs	
ACE 456	Agriculture and Food Policies	3hrs	
NRES 424	US Environ, Justice & Policy	4hrs	

UP 407	State and Local Public Finance	3hrs	
Technology I (choose one from the following list)			**2-4hrs**
ABE 141	ABE Principles: Biological	2hrs	
ABE 223	ABE Principles: Machine System	2hrs	
ABE 224	ABE Principles: Soil & Water	2hrs	
ABE 225	ABE Principles: Bioenvironment	2hrs	
ABE 226	ABE Principles: Bioprocessing	2hrs	
TSM 232	Materials and Construction Sys	3hrs	
TSM 234	Wiring, Motors and Control Sys	3hrs	
ANSC 110	Life with Animals and Biotech	3hrs	
CPSC 226	Intro to Weed Science	3hrs	
CPSC 261	Biotechnology in Agriculture	3hrs	
CPSC 265	Genetic Engineering Lab	3hrs	
CPSC 266	Data in Biology and Agriculture	4hrs	
Technology II (choose one from the following list)			**2-3hrs**
TSM 352	Land and Water Mgt Systems	3hrs	
TSM 371	Residential Housing Design	3hrs	
TSM 372	Environ Control & HVAC Systems	3hrs	
TSM 430	Project Management	2hrs	
TSM 435	Elec Computer Ctrl Sys	3hrs	
TSM 438	Renewable Energy Applications	3hrs	
TSM 465	Chemical Application Systems	3hrs	
TSM 467	Precision Agric Technology	3hrs	
TSM 486	Grain Bioprocessing Coproducts	3hrs	
ANSC 409	Meat Science	3hrs	
CPSC 408	Integrated Pest Mgt	3hrs	
CPSC 426	Weed Science Practicum	3hrs	
CPSC 428	Weed Mgt in Agronomic Crops *(if you take CPSC 428, you must take a 4hr upper level course from another list)*	2hrs	
CPSC 491	Intro to R Programming *(if you take CPSC 491, you must take a 4hr upper level course from another list)*	2hrs	
FSHN 460	Food Processing Engineering	3hrs	
FSHN 465	Principles of Food Technology	3hrs	
FSHN 469	Package Engineering	3hrs	
Advanced Scientific Literacy (choose one from the following list)			**3-4hrs**
NRES 340	Environmental Social Science Research Methods	3hrs	
NRES 421	Quantitative Methods in NRES	3hrs	
NRES 427	Modeling Natural Resources	4hrs	
CPSC 440	Applied Statistical Methods	4hrs	
ANSC 444	Applied Animal Genetics	3hrs	
ANSC 448	Mathematical Modeling in Life Sciences	3hrs	
ACE 431	Agri-food Strategic Management	3hrs	
FSHN 428	Community Nutrition	3hrs	
HDFS 420	Inequality, Public Policy and US Families	3hrs	
HDFS 461	Family Life Education	3hrs	

UP 316 UP 418 UP 443 UP 457 UP 478	Urban Informatics II GIS for Planners Scenarios, Plans & Future Cities Small Town/Rural Planning Workshop Community Development Workshop	3hrs 4hrs 3hrs 4hrs 4hrs	
Social Ecology (choose one from the following list)			**3hrs**
ACE 335 HDFS 420 NRES 428	Food Marketing and Behavior Inequality, Public Policy, and US Families Valuing Nature	3hrs 3hrs 3hrs	
Social Impact in Practice (choose one from the following list)			**3-9hrs**
MFST 450 HDFS 494 AGED 480	Social Impact Learning Experience *(MFST 450 & MFST 397 can only equal a total of 12hrs)* Applied Research Methods Collaborative Leadership	3-9hrs 3hrs 3hrs	
Experiential Learning Series			**7-16hrs**
MFST 301 MFST 397 MFST 401	Experiential Learning Preparedness and Planning Experiential Learning *(MFST 397 and MFST 450 can only equal a total of 12hrs)* Experiential Learning Review and Reflection	1hr 3-9hrs 3hrs	
Capstone			**3hrs**
MFST 498	Capstone	3hrs	

UPPER-LEVEL (300 or 400) COURSES REQUIRED BY MAJOR

AGED 340	Leadership Ethics & Pluralism (US Minority)		3hrs
TSM 311	Humanity in the Food Web		3hrs
Food Production I and II	Choose from the list	*	5-8hrs
Urban Planning II	Choose from the list		3-4hrs
Policy II	Choose from the list		3-4hrs
Technology II	Choose from the list	*	2-3hrs
Advanced Scientific Literacy	Choose from the list		3-4hrs
Social Ecology	Choose from the list		3hrs
Social Impact in Practice	Choose from the list	+	3-9hrs
Experiential Learning Series (MFST 301, 397, 401)		+	7-16hrs
MFST 498	Capstone		3hrs
Total upper-level hrs			**40-51hrs**

*if a 2hr course is taken in this discipline, then a 4hr upper-level course must be taken in the same or another discipline

+there is a limit of 12hrs that can be taken between MFST 397 and MFST 450

Example #1 of a 4-year course schedule:

Fall	**Spring**	**Fall**	**Spring**	**Fall**	**Spring**	**Fall**	**Spring**
ACES 101 (2hrs)	ACES 102 (3hrs)	NRES 201 (4hrs)	ECON II: ACE 255 (3hrs)	MFST 301 (1hr)	MFST 397 (3hrs)	MFST 401 (3hrs)	MFST 498 (3hrs)
MFST 201 (3hrs)	RHET 105 (4hrs)	Human Nutrition: FSHN 120 (3hrs)	Stats: CPSC 241 (3hrs)	Leadership: AGED 230 (3hrs)	Leadership: AGED 340 (3hrs)	Food Prod II: HORT 360 (3hrs)	Policy II: NRES 424 (4hrs)
MATH 220 (5hrs)	CHEM 104 &105 (4hrs)	ANSC 100 (4hrs)	Urban Plan I: UP 205 (3hrs)	Policy I: UP 211 (3hrs)	Food Prod I: HORT 341 (4hrs)	Social Impact in Practice: MFST 450 (3hrs)	Urban Plan II: UP 406 (3hrs)
CHEM 102 & 103 (4hrs)	NRES 102 (3hrs)	ECON I: ACE 100 (4hrs)	Open Choice: NRES 287 (3hrs)	Adv Sci Literacy: NRES 340 (3hrs)	Western (3hrs)	Social Ecology: NRES 428 (3hrs)	Hum & Arts: TSM 311 (3hrs)
HORT 100 (3hrs)			Hum & Arts (3hrs)	Non-Western: CPSC 116 (3hrs)	Open Choice (3hrs)	Tech II: CPSC 426 (3hrs)	Open Choice: (3hrs)
				Tech I: CPSC 226 (3hrs)		Open Choice (3hrs)	
16hrs	15hrs	15hrs	15hrs	16hrs	16hrs	18hrs	16hrs =127hrs

Example #2 of a 4-year course schedule:

Fall	**Spring**	**Fall**	**Spring**	**Fall**	**Spring**	**Fall**	**Spring**
ACES 101 (2hrs)	ACES 102 (3hrs)	NRES 201 (4hrs)	RHET 105 (4hrs)	MFST 301 (1hr)	MFST 397 (3hrs)	MFST 401 (3hrs)	MFST 498 (3hrs)
MFST 201 (3hrs)	CHEM 104 &105 (4hrs)	CPSC 112 (4hrs)	ECON II: ACE 255 (3hrs)	Leadership: AGED 230 (3hrs)	Leadership: AGED 340 (3hrs)	Tech II: TSM 438 (3hrs)	Policy II: ACE 456 (3hrs)
ANSC 100 (4hrs)	MATH 234 (4hrs)	ECON I: ACE 100 (4hrs)	Stats: ACE 261 (4hrs)	Policy I: UP 211 (3hrs)	Food Prod II: HORT 341 (4hrs)	Social Impact in Practice: MFST 450 (3hrs)	Open Choice (4hrs)
CHEM 102 & 103 (4hrs)	NRES 102 (3hrs)	Human Nutrition: FSHN 120 (3hrs)	Non-Western: ACE 251 (3hrs)	Food Prod I: ANSC 309 (2hrs)	Social Ecology: ACE 335 (3hrs)	Adv Sci Literacy: NRES 340 (3hrs)	Open Choice (3hrs)
Urban Plan I: UP 101 (3hrs)	Western (3hrs)		Tech I:CPSC 261 (3hrs)	Hum & Arts (3hrs)	Urban Plan II: UP 345 (3hrs)	Hum & Arts: TSM 311 (3hrs)	Open Choice (3hrs)
				Open Choice: ECON 302 (3hrs)			
16hrs	17hrs	15hrs	17hrs	15hrs	16hrs	15hrs	16hrs =127hrs

UNIVERSITY OF ILLINOIS
AT URBANA-CHAMPAIGN

College of Agricultural, Consumer
and Environmental Sciences

Academic Programs
128 Mumford Hall, MC-710
1301 West Gregory Drive
Urbana, IL 61801

May 8, 2019

Kathy Martensen, Assistant Provost
Office of the Provost
207 Swanlund Administration Building
Campus MC-304

Dear Kathy:

The ACES Courses and Curricula Committee, on behalf of the Faculty of ACES, has voted to approve the following proposal:

Establish a new major in Metropolitan Food and Environmental Systems, leading to the degree of Bachelor of Science in the College of Agricultural, Consumer and Environmental Sciences.

Please address all correspondence concerning this proposal to Dr. Tony Yannarell (***acy-ann@illinois.edu***). The proposal is now ready for review by the Senate Educational Policy Committee for proposed implementation in Fall 2019.

Thank you for your consideration. I look forward to receiving your reply.

Sincerely,

David M. Rosch
Interim Associate Dean
ACES Academic Programs

DMR/rhc

cc: M. J. Dailey
J. L. Hardesty
A. C. Yannarell
ACES C&C Binder

ILLINOIS

COLLEGE OF AGRICULTURAL, CONSUMER AND ENVIRONMENTAL SCIENCES

Department of Agricultural & Biological Engineering
338 Agriculture Engineering Sciences Building, MC-644
1304 W. Pennsylvania Ave.
Urbana, IL 61801

February 27, 2019

David M. Rosch
Interim Associate Dean
Office of Academic Programs
College of Agricultural, Consumer and
Environmental Sciences
125 Mumford Hall
1301 W. Gregory Dr.
Urbana, Il 61801

Dear Professor Rosch,

I am pleased to let you know that the faculty in the Department of Agricultural and Biological Engineering (ABE) enthusiastically approve the Metropolitan Food and Environmental Systems (MetroFESt) proposal that we have been jointly working on and fully support. We have evaluated our current course offerings and how they might be affected by the influx of the anticipated MetroFESt majors and do not anticipate any problems in ensuring that they will have access.

Thank you for including ABE in this proposal.

Sincerely,

Alan Hansen

Alan C. Hansen
Professor and Interim Head

ILLINOIS

COLLEGE OF AGRICULTURAL, CONSUMER AND ENVIRONMENTAL SCIENCES

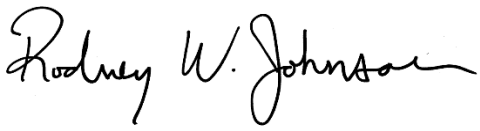
Department of Animal Sciences
110 Animal Sciences Laboratory, MC-630
1207 W. Gregory Drive
Urbana, IL 61801

February 25, 2019

Dear Professor David Rosch,

I am pleased to let you know that the Department of Animal Sciences enthusiastically approve the Metropolitan Food and Environmental Systems (MetroFESt) proposal. We have evaluated our current course offerings and how they might be affected by the influx of the anticipated MetroFESt majors and do not anticipate any problems in ensuring that they will have access. Moreover, the impact on course enrollments should be minimal, as these majors will represent only a small fraction relative to the current size of those courses. We also believe that the math, statistics, and many natural science courses that the MetroFESt students are required to take will properly prepare them for many of the higher-level Animal Sciences courses even without the listed prerequisites.

Sincerely,



Rodney W. Johnson, Ph.D.
Professor and Head, Department of Animal Sciences
University of Illinois
Urbana, IL 61801

ILLINOIS

COLLEGE OF AGRICULTURAL, CONSUMER AND ENVIRONMENTAL SCIENCES

Department of Agricultural & Consumer Economics
326 Mumford Hall, MC-710
1301 W. Gregory Drive
Urbana, IL 61801

February 26, 2019

David M. Rosch
Interim Associate Dean
Office of Academic Programs
College of Agriculture, Consumer and
Environmental Sciences
125 Mumford Hall
1301 W. Gregory Dr.
Urbana, Il 61801

Dear Professor David Rosch,

I am pleased to let you know that the faculty in the Department of Agricultural and Consumer Economics enthusiastically approve the Metropolitan Food and Environmental Systems (MetroFESt) proposal. We have evaluated our current course offerings and how they might be affected by the influx of the anticipated MetroFESt majors and do not anticipate any problems in ensuring that they will have access. Of note, we will soon be expanding our departmental course offerings to include an ACE Intermediate Microeconomics Theory course to replace the ECON 302 prerequisite for a few of the upper level courses included in the MetroFESt curriculum. We look forward to having this new course be included as a choice for the Advanced Scientific Literacy requirement for MetroFESt students. This change should occur prior to the anticipated MetroFESt program start date.

Sincerely,

John A. (Sean) Fox
Professor and Head
Agricultural and Consumer Economics

ILLINOIS

Agricultural Education Program

College of Agricultural, Consumer and Environmental Sciences
905 S. Goodwin Avenue
174 Bevier Hall
Urbana, IL 61801

February 26, 2019

Anna Dilger, Ph.D.
Interim Associate Dean
Office of Academic Programs, College of ACES

Dear Professor Dilger,

On behalf of the Agricultural Education Program, I am pleased to write this letter to express our approval of the Metropolitan Food and Environmental Systems (MetroFESt) proposal that we have been consulting with you on and that we give our support. We have evaluated our current course offerings in AGED 230 and AGED 260 and how they might be affected by the influx of the anticipated MetroFESt majors. We do not anticipate any problems in ensuring that these students will have access. Moreover, the impact on course enrollments should be minimal, as these majors will represent only a small fraction relative to the current size of these courses.

Sincerely,

David M. Rosch, Ph.D.
Associate Professor and Acting Director

ILLINOIS

COLLEGE OF AGRICULTURAL, CONSUMER AND ENVIRONMENTAL SCIENCES

Department of Crop Sciences
AW-101 Turner Hall, MC-046
1102 S. Goodwin Ave.
Urbana, IL 61801-4730

February 25, 2019

Dr. David M. Rosch
Interim Associate Dean
Office of Academic Programs
College of Agriculture, Consumer and
Environmental Sciences
125 Mumford Hall
1301 W. Gregory Dr.
Urbana, Il 61801

Dear Dr. Rosch,

I am pleased to let you know that the faculty in the Department of Crop Sciences enthusiastically approve the Metropolitan Food and Environmental Systems (MetroFESt) proposal. We have evaluated our current course offerings and how they might be affected by the influx of the anticipated MetroFESt majors and do not anticipate any problems in ensuring that they will have access.

Sincerely,

Adam Davis

Professor and Head
Department of Crop Sciences
University of Illinois

ILLINOIS

COLLEGE OF AGRICULTURAL, CONSUMER & ENVIRONMENTAL SCIENCES

Department of Food Science & Human Nutrition
260 Bevier Hall, MC-182
905 S. Goodwin Ave.
Urbana, IL 61801

February 25, 2019

David M. Rosch, Ph.D.
Interim Associate Dean
Office of Academic Programs, College of ACES

Dear Professor David Rosch,

On behalf of the Department of Food Science and Human Nutrition I am pleased to write this letter to express our approval of the Metropolitan Food and Environmental Systems (MetroFESt) proposal that we have been consulting with you on and that we give our support. We have evaluated our current course offerings and how they might be affected by the influx of the anticipated MetroFESt majors and do not anticipate any problems in ensuring that they will have access. Moreover, the impact on course enrollments should be minimal, as these majors will represent only a small fraction relative to the current size of these courses.

Sincerely,

Nicki J. Engeseth, Ph.D.
Professor and Acting Department Head

ILLINOIS

COLLEGE OF AGRICULTURAL, CONSUMER & ENVIRONMENTAL SCIENCES

Department of Human Development & Family Studies
222 Bevier Hall, MC-180
905 S. Goodwin Ave.
Urbana, IL 61801

February 27, 2019

David Rosch, Ph.D.
Interim Associate Dean of Academic Programs in ACES
128 Mumford Hall
Urbana, IL 61801

Dear Professor David Rosch,

I am pleased to let you know that the faculty in the Department of Human Development and Family Studies enthusiastically approve the Metropolitan Food and Environmental Systems (MetroFESt) proposal. We have evaluated our current course offerings and how they might be affected by the influx of the anticipated MetroFESt majors. Our finding is that there is room for MetroFESt students; we do not anticipate any problems with their enrollment

Sincerely,

Ramona Faith Oswald, Ph.D.
Professor and Interim Head

Sincerely,

Ramona Faith Oswald, Ph.D.
Professor & Interim Department Head

ILLINOIS

COLLEGE OF AGRICULTURAL, CONSUMER & ENVIRONMENTAL SCIENCES

Department of Natural Resources and Environmental Sciences
W-503 Turner Hall, MC-047
1102 S. Goodwin Ave.
Urbana, IL 61801-4730

February 22, 2019

Dr. David Rosch
Interim Associate Dean of Academic Programs
College of ACES

Dear Dr. Rosch:

I am pleased to let you know that the faculty in the Department of Natural Resources and Environmental Sciences enthusiastically approve the Metropolitan Food and Environmental Systems (MetroFESt) proposal that we have been jointly working on and fully support. We have evaluated our current course offerings and how they might be affected by the influx of the anticipated MetroFESt students, and do not anticipate any problems in ensuring that they will have access to NRES classes. In fact, we will welcome them! Please note that we are also changing our prerequisite requirement for NRES 201 to allow MATH 124 or its equivalent rather than calculus only.

Sincerely,

Jeffrey D. Brawn
Professor and Head
Department of Natural Resources and Environmental Sciences

ILLINOIS

COLLEGE OF FINE & APPLIED ARTS

Department of Urban and Regional Planning
111 Temple Hoyne Buell Hall, MC-619
611 East Lorado Taft Drive
Champaign, IL 61820-6921

David M. Rosch
Interim Associate Dean
Office of Academic Programs
College of Agriculture, Consumer and
Environmental Sciences
125 Mumford Hall
1301 W. Gregory Dr.
Urbana, IL 61801

By email to dmrosch@illinois.edu

Dear Professor Rosch:

I am pleased to inform you that the Department of Urban and Regional Planning approves the Metropolitan Food and Environmental Systems (MetroFESt) proposal. Based on the many overlaps in interest outlined in the proposal, we think that this is a very natural fit and an excellent opportunity for MetroFESt and Urban and Regional Planning, as well as for future students whose interests align with this interdisciplinary program.

Please contact me at 217-300-8178 or rpendall@illinois.edu if you have questions.

Thank you,

Rolf Pendall, Professor and Head

UNIVERSITY OF ILLINOIS
AT URBANA-CHAMPAIGN

University Library
1408 West Gregory Drive
Urbana, IL 61801

February 25, 2019

David Rosch
Interim Associate Dean
College ACES
125 Mumford Hall
1301 W. Gregory Dr.
Urbana, IL 61801

Dear Dr. Rosch:

The University Library recently received a proposal from you outlining the College of ACES' plans to establish a Bachelor of Science degree program in Metropolitan Food and Environmental Systems (MetroFESt).

Based upon the documents received and reviewed by Sarah Williams, Melody Allison, and Erin Kerby in the Funk ACES and Veterinary Medicine libraries, it is our belief that there will be no significant impact on the University Library. We are already supporting most of the courses through existing resource allocations and see no meaningful changes in our operations resulting from this proposal.

If additional services or materials are required as the programs further develop, we will be happy to discuss those needs as they emerge.

Sincerely,

John Wilkin
Juanita J. and Robert E. Simpson Dean of Libraries and University Librarian

e-cc: Melody Allison
Megean Dailey, Director of Metropolitan Food and Environmental Systems
Erin Kerby
Mary Lowry, Assistant Dean for Student Success, College of ACES
Thomas Teper
Sarah Williams

College of ACES - Metropolitan Food & Environmental Sciences (MetroFESt) Major

Assumptions:

Cohort of 25 new undergraduate students will begin in Fall 2020
Additional increase of 25 students per year until full capacity of 100 students by Fall 2023
Expenditure inflation rate used - 2%
One Specialized Faculty member is required to administer the major
Teaching Assistants - 1 for Years 1-2 and 5 for Years 3-10
.5 FTE Specialized Faculty - Instruction for Years 3-10
Year 1 Expenditures - program development costs/stakeholder input/travel
Year 2 Expenditures - fundraising and program startup
Year 3-10 Expenditures - URM student scholarships $25,000 per class
Year 3 Other Operating Costs - student support funds
Each academic department within the College of ACES will participate

Investments:

	Central (Pool) Funds Nonrecurring	College Funds	Other Units
Year 1	$ 105,000	$ -	$ -
Year 2	$ 167,500	$ -	$ -
Year 3	$ 248,282	$ -	$ -
Year 4		$ -	$ -
Year 5		$ -	$ -
Year 6		$ -	$ -
Year 7		$ -	$ -
Year 8		$ -	$ -
Year 9		$ -	$ -
Year 10			$ -

Revenues

Undergraduate Revenue:

Base Rate Year 1	$ 12,036	Tuition Paid	
Program Differential Rate Year 1	$ -	Illinois Residents	12,036
Non-resident + Base Rate Year 1	$ 28,156	US: Out of state	28,156
International Rate Year 1	$ 29,016	International	29,016

Number of Students	Illinois Residents	US: Out of state	International	Rate Increase	Cumulative Increase
Year 1	-	-	-		
Year 2	-	-	-	1%	1.0%
Year 3	20	3	2	1%	2.0%
Year 4	40	6	4	1%	3.0%
Year 5	60	9	6	1%	4.1%
Year 6	80	12	8	1%	5.1%
Year 7	80	12	8	1%	6.2%
Year 8	80	12	8	1%	7.2%
Year 9	80	12	8	1%	8.3%
Year 10	80	12	8	1%	9.4%

Graduate, Professional, Certificate Revenue

Base Rate Year 1	$ 12,266	Tuition Paid	
Program Differential Rate Year 1	$ 5,568	Illinois Residents	17,834
Non-resident + Base Rate Year 1	$ 26,502	US: Out of state	32,070
International Rate Year 1	$ 26,502	International	32,070

Number of Students	Illinois Residents	US: Out of state	International	Rate Increase	Cumulative Increase
Year 1	-	-	-		
Year 2	-	-	-	1%	1.0%
Year 3	-	-	-	0%	1.0%
Year 4	-	-	-	0%	1.0%
Year 5	-	-	-	0%	1.0%
Year 6	-	-	-	0%	1.0%
Year 7	-	-	-	0%	1.0%
Year 8	-	-	-	0%	1.0%
Year 9	-	-	-	0%	1.0%
Year 10	-	-	-	0%	1.0%

Other Revenue:

	Description 1: ICR, fees, etc.	Description 2: ICR, fees, etc.	Description 3: ICR, fees, etc.
Year 1	-	-	-
Year 2	-	-	-
Year 3	-	-	-

Year 4	-	-	-
Year 5	-	-	-
Year 6	-	-	-
Year 7	-	-	-
Year 8	-	-	-
Year 9	-	-	-
Year 10	-	-	-

Expenditures

Inflation: 2%

Tenure System Faculty

	# of new Faculty	Average Salary Cost/ new faculty	Startup Costs / new faculty
Year 1	-	200,000	1,000,000
Year 2	-	204,000	1,020,000
Year 3	-	208,080	1,040,400
Year 4	-	212,242	1,061,208
Year 5	-	216,486	1,082,432
Year 6	-	220,816	1,104,081
Year 7	-	225,232	1,126,162
Year 8	-	229,737	1,148,686
Year 9	-	234,332	1,171,659
Year 10	-	239,019	1,195,093

	Startup Transition Costs %
Year 1 of hire	30%
Year 2 of hire	25%
Year 3 of hire	20%
Year 4 of hire	10%
Year 5 of hire	10%
Year 6 of hire	5%
Should total 100%	100%

Include only the change in the number from year to year

	Specialized Faculty/Advisors/Lecturers, etc.		IT/Programming/Operations/Support Staff		Teaching & Graduate Research Assistants	
	#	Average Cost per	#	Average Cost per	#	Average Cost per
Year 1	1	$ 70,000.00	-	$ 75,000.00	1	$ 20,000.00
Year 2	0.5	$ 71,400.00	-	$ 76,500.00	-	$ 20,400.00
Year 3	-	$ 72,828.00	-	$ 78,030.00	4	$ 20,808.00
Year 4	-	$ 74,284.56	-	$ 79,590.60	-	$ 21,224.16
Year 5	-	$ 75,770.25	-	$ 81,182.41	-	$ 21,648.64
Year 6	-	$ 77,285.66	-	$ 82,806.06	-	$ 22,081.62
Year 7	-	$ 78,831.37	-	$ 84,462.18	-	$ 22,523.25
Year 8	-	$ 80,408.00	-	$ 86,151.43	-	$ 22,973.71
Year 9	-	$ 82,016.16	-	$ 87,874.45	-	$ 23,433.19
Year 10	-	$ 83,656.48	-	$ 89,631.94	-	$ 23,901.85

	Capital Expenditures	Infrastructure/ Maintenance Costs	Platform/Online Costs	Faculty Overload Costs	Other Operating Costs	Estimated Residual Value of Capital Expenditures
Year 1	$ -	$ -	$ 15,000	$ -	$ -	$ -
Year 2	$ -	$ -	$ 40,000	$ -	$ -	$ -
Year 3	$ -	$ -	$ -	$ -	$ 35,000	$ -
Year 4	$ -	$ -	$ -	$ -	$ 50,000	$ -
Year 5	$ -	$ -	$ -	$ -	$ 75,000	$ -
Year 6	$ -	$ -	$ -	$ -	$ 100,000	$ -
Year 7	$ -	$ -	$ -	$ -	$ 100,000	$ -
Year 8	$ -	$ -	$ -	$ -	$ 100,000	$ -
Year 9	$ -	$ -	$ -	$ -	$ 100,000	$ -
Year 10	$ -	$ -	$ -	$ -	$ 100,000	$ -
	$ -					

Increased campus costs

	Financial Aid	Teaching support Other Colleges	Increased Research Support	Increased Tech Support	Increased Admin Support
Year 1	$ -	$ -	$ -	$ -	$ -
Year 2	$ -	$ -	$ -	$ -	$ -
Year 3	$ 49,111.69	$ -	$ -	$ -	$ -
Year 4	$ 99,205.62	$ -	$ -	$ -	$ -
Year 5	$ 150,296.52	$ -	$ -	$ -	$ -
Year 6	$ 202,399.31	$ -	$ -	$ -	$ -
Year 7	$ 204,423.30	$ -	$ -	$ -	$ -
Year 8	$ 206,467.54	$ -	$ -	$ -	$ -
Year 9	$ 208,532.21	$ -	$ -	$ -	$ -
Year 10	$ 210,617.54	$ -	$ -	$ -	$ -

College of ACES - Metropolitan Food & Environmental Sciences (MetroFESt) Major

Revenue		**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**	**Year 7**	**Year 8**	**Year 9**	**Year 10**
	Undergraduate										
	Illinois residents	$ -	$ -	$ 245,558	$ 496,028	$ 751,483	$ 1,011,997	$ 1,022,117	$ 1,032,338	$ 1,042,661	$ 1,053,088
	Nonresident	-	-	86,166	174,055	263,693	355,107	358,658	362,245	365,867	369,526
	International	-	-	59,198	119,581	181,165	243,969	246,409	248,873	251,361	253,875
	Subtotal: UG	$ -	$ -	$ 390,923	$ 789,664	$ 1,196,341	$ 1,611,072	$ 1,627,183	$ 1,643,455	$ 1,659,889	$ 1,676,488
	Graduate										
	Illinois residents	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Nonresident	-	-	-	-	-	-	-	-	-	-
	International	-	-	-	-	-	-	-	-	-	-
	Subtotal: Graduate	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Less: Financial Aid	$ -	$ -	$ (49,112)	$ (99,206)	$ (150,297)	$ (202,399)	$ (204,423)	$ (206,468)	$ (208,532)	$ (210,618)
	Other										
	Description 1: ICR, fees, etc.	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Description 2: ICR, fees, etc.	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Description 3: ICR, fees, etc.	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total Revenue		$ -	$ -	$ 341,811	$ 690,458	$ 1,046,044	$ 1,408,673	$ 1,422,760	$ 1,436,987	$ 1,451,357	$ 1,465,871

Expenditures		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Recurring											
	Faculty	-	-	-	-	-	-	-	-	-	-
	Spec Faculty/Adv./Lect.,.	70,000	107,100	109,242	111,427	113,655	115,928	118,247	120,612	123,024	125,485
	IT/Prog/Operation/Support Staff	-	-	-	-	-	-	-	-	-	-
	TA/GRA	20,000	20,400	104,040	106,121	108,243	110,408	112,616	114,869	117,166	119,509
	Total Recurring	90,000	127,500	213,282	217,548	221,899	226,337	230,863	235,481	240,190	244,994
Nonrecurring											
	Faculty Startups	-	-	-	-	-	-	-	-	-	-
	Infrastructure/ Maintenance Costs	-	-	-	-	-	-	-	-	-	-
	Platform/Online Costs	15,000	40,000	-	-	-	-	-	-	-	-
	Faculty Overload Costs	-	-	-	-	-	-	-	-	-	-
	Other Operating Costs	-	-	35,000	50,000	75,000	100,000	100,000	100,000	100,000	100,000
Other campus costs											
	Teaching support Other Colleges	-	-	-	-	-	-	-	-	-	-
	Increased Research Support	-	-	-	-	-	-	-	-	-	-
	Increased Tech Support	-	-	-	-	-	-	-	-	-	-
	Increased Admin Support	-	-	-	-	-	-	-	-	-	-
Total Expenses		105,000	167,500	248,282	267,548	296,899	326,337	330,863	335,481	340,190	344,994
Net Revenue		$ (105,000)	$ (167,500)	$ 93,529	$ 422,911	$ 749,146	$ 1,082,336	$ 1,091,896	$ 1,101,507	$ 1,111,167	$ 1,120,877

Cash Flow		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
	Carryover Cash		-	-	341,811	764,722	1,513,867	2,596,204	3,688,100	4,789,607	5,900,774
	Investment from unit	-	-	-	-	-	-	-	-	-	-
	Investments from other units	-	-	-	-	-	-	-	-	-	-
	Investment from central pool	105,000	167,500	248,282							
	Total Revenue	$ -	$ -	$ 341,811	$ 690,458	$ 1,046,044	$ 1,408,673	$ 1,422,760	$ 1,436,987	$ 1,451,357	$ 1,465,871
	Total Expenses	105,000	167,500	248,282	267,548	296,899	326,337	330,863	335,481	340,190	344,994
	Capital Expenditures	-	-	-	-	-	-	-	-	-	-
	Surplus/Deficit	-	-	341,811	764,722	1,513,867	2,596,204	3,688,100	4,789,607	5,900,774	7,021,651

Return on Investment	
3 year	-156.47%
5 Year	16.94%
10 year	30.79%

STATEMENT FOR PROGRAMS OF STUDY CATALOG:

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The Metropolitan Food and 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 postbaccalaureate 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.

Appendix A:
(Proposed Curriculum Revisions)

GENERAL EDUCATION REQUIREMENTS

Composition I			**4hrs**
RHET 105	Writing and Research	4hrs	
Advanced Composition			**3hrs**
AGED 230	Leadership Communication	3hrs	
Cultural Studies			**9hrs**
AGED 340 (US Minority) ACE 251 or CPSC 116 (Non-Western) Western	Leadership Ethics & Pluralism (US Minority) World Food Economy or The Global Food Web Select from campus approved list	3hrs 3hrs 3hrs	
Humanities & the Arts			**6hrs**
TSM 311 Select from campus approved list	Humanity in the Food Web Select from campus approved list	3hrs 3hrs	
Natural Science and Technology			**8hrs**
CHEM 102 & 103 CHEM 104 & 105	General Chemistry I General Chemistry II	4hrs 4hrs	
Quantitative Reasoning I			**3-5hrs**
Select from campus approved mathematics courses			
Quantitative Reasoning II			**3-4hrs**
Select from one of the following: ACE 261 CPSC 241	 Applied Statistical Methods Intro to Applied Statistics		
Social & Behavioral Sciences			**6hrs**
This requirement is met by the MFST core curriculum			

CORE CURRICULUM

Required Introductory Courses			**6-8hrs**
ACES 101 or ACES 200 ACES 102 MFST 101	Contemporary Issues in ACES/ACES Tr Orient Introduction to Food Systems Experiencing Food Systems	0-2hrs 3hrs 3hrs	
Understanding Abiotic-Biotic Interactions Necessary for Food			**14-15hrs**
NRES 102 CPSC 112 or HORT 100 ANSC 100 NRES 201	Introduction to NRES Intro to Crop Sciences or Intro to Horticulture Introduction to Animal Sciences Introduction to Soils	3hrs 3-4hrs 4hrs 4hrs	
Human Nutrition (choose one from the following list)			**3-4hrs**
FSHN 120 FSHN 220	Contemporary Nutrition Principles of Nutrition	3hrs 4hrs	
Economic I and II			**7hrs**
ACE 100 *(fulfills SBS requirement)* ACE 255 *(fulfills SBS requirement)*	Agriculture, Consumer & Resource Economics Economics of Food and Environmental Justice	4hrs 3hrs	
Food Production I and II (choose two from the following list)			**5-8hrs**

HORT 341	Greenhouse Mgmt and Production	4hrs	
HORT 360	Vegetable Crop Production	3hrs	
HORT 421	Horticulture Physiology	4hrs	
HORT 435	Urban Food Production	3hrs	
HORT 466	Growth & Dev of Hort Crops	4hrs	
CPSC 418	Crop Growth and Mgmt	3hrs	
CPSC 437	Agroecology	3hrs	
NRES 488	Soil Fertility and Fertilizers	3hrs	
ANSC 301	Food Animal Production, Mgmt & Eval	3hrs	
ANSC 309	Meat Production and Marketing *(if you take ANSC 309, you must take a 4hr upper level course here or from another list)*	2hrs	
ANSC 400	Dairy Herd Mgmt	3hrs	
ANSC 401	Beef Production	3hrs	
ANSC 402	Sheep Production	3hrs	
ANSC 403	Pork Production	3hrs	
ANSC 404	Poultry Science	3hrs	
Urban Planning I (choose one from the following list)			**3hrs**
UP 101	Intro to City Planning	3hrs	
UP 116	Urban Informatics I	3hrs	
UP 136	Urban Sustainability	3hrs	
UP 203	Cities: Planning & Urban Life	3hrs	
UP 204	Chicago: Planning & Urban Life	3hrs	
UP 205	Ecology & Environmental Sustainability	3hrs	
UP 260	Social Inequality and Planning	3hrs	
Urban Planning II (choose one from the following list)			**3-4hrs**
UP 330	The Modern American City	3hrs	
UP 340	Planning for Healthy Cities	3hrs	
UP 345	Economic Development Planning	3hrs	
UP 405	Watershed Ecology and Planning	4hrs	
UP 406	Urban Ecology	4hrs	
UP 473	Housing & Urban Planning	3hrs	
UP 475	Real Estate Development Fundamentals	3hrs	
Policy I (choose one from the following list)			**3hrs**
ACE 199	Food Ag & Pol	3hrs	
ACE 291	Ag Policy & Leadership	3hrs	
ACE 292	Farm, Food & Env Policy	3hrs	
UP 211	Local Planning, Gov't and Law	3hrs	
Policy II (choose one from the following list)			**3-4hrs**
ACE 306	Food Law	3hrs	
ACE 403	Agricultural Law	3hrs	
ACE 406	Environmental Law	3hrs	
ACE 410	Energy Economics	3hrs	
ACE 411	Environment and Development	3hrs	
ACE 456	Agriculture and Food Policies	3hrs	
NRES 424	US Environ, Justice & Policy	4hrs	

UP 407	State and Local Public Finance	3hrs	
Technology I (choose one from the following list)			**2-4hrs**
ABE 141	ABE Principles: Biological	2hrs	
ABE 223	ABE Principles: Machine System	2hrs	
ABE 224	ABE Principles: Soil & Water	2hrs	
ABE 225	ABE Principles: Bioenvironment	2hrs	
ABE 226	ABE Principles: Bioprocessing	2hrs	
TSM 232	Materials and Construction Sys	3hrs	
TSM 234	Wiring, Motors and Control Sys	3hrs	
ANSC 110	Life with Animals and Biotech	3hrs	
CPSC 226	Intro to Weed Science	3hrs	
CPSC 261	Biotechnology in Agriculture	3hrs	
CPSC 265	Genetic Engineering Lab	3hrs	
CPSC 266	Data in Biology and Agriculture	4hrs	
Technology II (choose one from the following list)			**2-3hrs**
TSM 352	Land and Water Mgt Systems	3hrs	
TSM 371	Residential Housing Design	3hrs	
TSM 372	Environ Control & HVAC Systems	3hrs	
TSM 430	Project Management	2hrs	
TSM 435	Elec Computer Ctrl Sys	3hrs	
TSM 438	Renewable Energy Applications	3hrs	
TSM 465	Chemical Application Systems	3hrs	
TSM 467	Precision Agric Technology	3hrs	
TSM 486	Grain Bioprocessing Coproducts	3hrs	
ANSC 409	Meat Science	3hrs	
CPSC 408	Integrated Pest Mgt	3hrs	
CPSC 426	Weed Science Practicum	3hrs	
CPSC 428	Weed Mgt in Agronomic Crops *(if you take CPSC 428, you must take a 4hr upper level course from another list)*	2hrs	
CPSC 491	Intro to R Programming *(if you take CPSC 491, you must take a 4hr upper level course from another list)*	2hrs	
FSHN 460	Food Processing Engineering	3hrs	
FSHN 465	Principles of Food Technology	3hrs	
FSHN 469	Package Engineering	3hrs	
Advanced Scientific Literacy (choose one from the following list)			**3-4hrs**
NRES 340	Environmental Social Science Research Methods	3hrs	
NRES 421	Quantitative Methods in NRES	3hrs	
NRES 427	Modeling Natural Resources	4hrs	
CPSC 440	Applied Statistical Methods	4hrs	
ANSC 444	Applied Animal Genetics	3hrs	
ANSC 448	Mathematical Modeling in Life Sciences	3hrs	
ACE 431	Agri-food Strategic Management	3hrs	
FSHN 428	Community Nutrition	3hrs	
HDFS 420	Inequality, Public Policy and US Families	3hrs	
HDFS 461	Family Life Education	3hrs	

UP 316 UP 418 UP 443 UP 457 UP 478	Urban Informatics II GIS for Planners Scenarios, Plans & Future Cities Small Town/Rural Planning Workshop Community Development Workshop	3hrs 4hrs 3hrs 4hrs 4hrs	
Social Ecology (choose one from the following list)			**3hrs**
ACE 335 HDFS 420 NRES 428	Food Marketing and Behavior Inequality, Public Policy, and US Families Valuing Nature	3hrs 3hrs 3hrs	
Social Impact in Practice (choose one from the following list)			**3-9hrs**
MFST 450 HDFS 494 AGED 480	Social Impact Learning Experience *(MFST 450 & MFST 397 can only equal a total of 12hrs)* Applied Research Methods Collaborative Leadership	3-9hrs 3hrs 3hrs	
Experiential Learning Series			**7-16hrs**
MFST 301 MFST 397 MFST 401	Experiential Learning Preparedness and Planning Experiential Learning *(MFST 397 and MFST 450 can only equal a total of 12hrs)* Experiential Learning Review and Reflection	1hr 3-9hrs 3hrs	
Capstone			**3hrs**
MFST 498	Capstone	3hrs	

UPPER-LEVEL (300 or 400) COURSES REQUIRED BY MAJOR

AGED 340	Leadership Ethics & Pluralism (US Minority)		3hrs
TSM 311	Humanity in the Food Web		3hrs
Food Production I and II	Choose from the list	*	5-8hrs
Urban Planning II	Choose from the list		3-4hrs
Policy II	Choose from the list		3-4hrs
Technology II	Choose from the list	*	2-3hrs
Advanced Scientific Literacy	Choose from the list		3-4hrs
Social Ecology	Choose from the list		3hrs
Social Impact in Practice	Choose from the list	+	3-9hrs
Experiential Learning Series (MFST 301, 397, 401)		+	7-16hrs
MFST 498	Capstone		3hrs
Total upper-level hrs			**40-51hrs**

*if a 2hr course is taken in this discipline, then a 4hr upper-level course must be taken in the same or another discipline

+there is a limit of 12hrs that can be taken between MFST 397 and MFST 450

Example #1 of a 4-year course schedule:

Fall	**Spring**	**Fall**	**Spring**	**Fall**	**Spring**	**Fall**	**Spring**
ACES 101 (2hrs)	ACES 102 (3hrs)	NRES 201 (4hrs)	ECON II: ACE 255 (3hrs)	MFST 301 (1hr)	MFST 397 (3hrs)	MFST 401 (3hrs)	MFST 498 (3hrs)
MFST 201 (3hrs)	RHET 105 (4hrs)	Human Nutrition: FSHN 120 (3hrs)	Stats: CPSC 241 (3hrs)	Leadership: AGED 230 (3hrs)	Leadership: AGED 340 (3hrs)	Food Prod II: HORT 360 (3hrs)	Policy II: NRES 424 (4hrs)
MATH 220 (5hrs)	CHEM 104 &105 (4hrs)	ANSC 100 (4hrs)	Urban Plan I: UP 205 (3hrs)	Policy I: UP 211 (3hrs)	Food Prod I: HORT 341 (4hrs)	Social Impact in Practice: MFST 450 (3hrs)	Urban Plan II: UP 406 (3hrs)
CHEM 102 & 103 (4hrs)	NRES 102 (3hrs)	ECON I: ACE 100 (4hrs)	Open Choice: NRES 287 (3hrs)	Adv Sci Literacy: NRES 340 (3hrs)	Western (3hrs)	Social Ecology: NRES 428 (3hrs)	Hum & Arts: TSM 311 (3hrs)
HORT 100 (3hrs)			Hum & Arts (3hrs)	Non-Western: CPSC 116 (3hrs)	Open Choice (3hrs)	Tech II: CPSC 426 (3hrs)	Open Choice: (3hrs)
				Tech I: CPSC 226 (3hrs)		Open Choice (3hrs)	
16hrs	15hrs	15hrs	15hrs	16hrs	16hrs	18hrs	16hrs =127hrs

Example #2 of a 4-year course schedule:

Fall	**Spring**	**Fall**	**Spring**	**Fall**	**Spring**	**Fall**	**Spring**
ACES 101 (2hrs)	ACES 102 (3hrs)	NRES 201 (4hrs)	RHET 105 (4hrs)	MFST 301 (1hr)	MFST 397 (3hrs)	MFST 401 (3hrs)	MFST 498 (3hrs)
MFST 201 (3hrs)	CHEM 104 &105 (4hrs)	CPSC 112 (4hrs)	ECON II: ACE 255 (3hrs)	Leadership: AGED 230 (3hrs)	Leadership: AGED 340 (3hrs)	Tech II: TSM 438 (3hrs)	Policy II: ACE 456 (3hrs)
ANSC 100 (4hrs)	MATH 234 (4hrs)	ECON I: ACE 100 (4hrs)	Stats: ACE 261 (4hrs)	Policy I: UP 211 (3hrs)	Food Prod II: HORT 341 (4hrs)	Social Impact in Practice: MFST 450 (3hrs)	Open Choice (4hrs)
CHEM 102 & 103 (4hrs)	NRES 102 (3hrs)	Human Nutrition: FSHN 120 (3hrs)	Non-Western: ACE 251 (3hrs)	Food Prod I: ANSC 309 (2hrs)	Social Ecology: ACE 335 (3hrs)	Adv Sci Literacy: NRES 340 (3hrs)	Open Choice (3hrs)
Urban Plan I: UP 101 (3hrs)	Western (3hrs)		Tech I:CPSC 261 (3hrs)	Hum & Arts (3hrs)	Urban Plan II: UP 345 (3hrs)	Hum & Arts: TSM 311 (3hrs)	Open Choice (3hrs)
				Open Choice: ECON 302 (3hrs)			
16hrs	17hrs	15hrs	17hrs	15hrs	16hrs	15hrs	16hrs =127hrs

Metropolitan Food and Environmental Systems Organizational Chart