



**SOUTH DAKOTA BOARD OF REGENTS  
ACADEMIC AFFAIRS FORMS**

**New Baccalaureate Degree Minor**

<b>UNIVERSITY:</b>	SDSU
<b>TITLE OF PROPOSED MINOR:</b>	Sustainable Local Foods
<b>DEGREE(S) IN WHICH MINOR MAY BE EARNED:</b>	Any
<b>EXISTING RELATED MAJORS OR MINORS:</b>	Sustainability Minor, Horticulture (B.S. & Minor), Nutrition & Dietetics (B.S.), Nutrition Minor
<b>INTENDED DATE OF IMPLEMENTATION:</b>	2019-2020 Academic Year
<b>PROPOSED CIP CODE:</b>	30.3301
<b>UNIVERSITY DEPARTMENT:</b>	Agronomy, Horticulture & Plant Science
<b>UNIVERSITY DIVISION:</b>	College of Agriculture, Food & Environmental Sciences

**University Approval**

*To the Board of Regents and the Executive Director: I certify that I have read this proposal, that I believe it to be accurate, and that it has been evaluated and approved as provided by university policy.*

\_\_\_\_\_  
President of the University

5/13/2019

\_\_\_\_\_  
Date

- 1. Do you have a major in this field?**  Yes  No

- 2. If you do not have a major in this field, explain how the proposed minor relates to your university mission.**

South Dakota State University (SDSU) requests authorization to offer a minor in Sustainable Local Foods. The Sustainable Local Foods Minor is proposed as a collaboration between the Departments of Agronomy, Horticulture and Plant Science and Health and Nutritional Sciences. The Department of Agronomy, Horticulture and Plant Science has a B.S. degree in Horticulture and the Department of Health and Nutritional Sciences has a B.S. degree in Nutrition and Dietetics. Academic training from both departments through this minor will strengthen the graduate's ability to explore the health impacts of consuming locally produced fruits and vegetables coupled with life-long healthy food choices and knowledge of human dietary needs.

This minor will provide evidenced-based information on healthful food choices and sustainable food production.<sup>1</sup> There is much misinformation in the popular press and even in some of the professional literature on sustainable practices in food production. The proposed minor will enable students to critically evaluate many health claims tied to locally produced foods and understand the merits of sustainable fruit and vegetable production practices. The focus of this new minor is in support of the SDSU mission to provide rich academic experiences through inspired and student-centered programs. This minor will provide knowledge in food production, food safety, and health and nutrition.

SDSU does not request new state resources.

### **3. What is the nature/purpose of the proposed minor?**

The Sustainable Local Foods Minor is designed to foster active learning of small-scale vegetable-crop food production systems and health benefits tied to the choice of consumption of healthier foods. It is designed to equip students in any major to understand the process of growing, harvesting, storage, preparation, and perceived nutritional benefits of locally produced food. Students will explore the fundamental ecological, nutritional, and social forces that influence the long-term viability of today's small-scale food production systems.

The Department of Agronomy, Horticulture and Plant Science and the Department of Nutrition and Dietetics will foster and nurture an experiential learning-center environment where students learn that community access to wholesome, seasonal, and locally-grown fruits and vegetables link directly to wellness, sense of place, and environmental sustainability.

Today's U.S. Agriculture system produces unprecedented quantities of food. However, millions of people lack access to an adequate food supply creating issues of food insecurity throughout the U.S. including South Dakota.<sup>2</sup> This minor is intended for all students with an interest in expanding their knowledge of sustainable ways to produce food and deliver nutrients to improve human health and livelihoods.

### **4. How will the proposed minor benefit students? What are the majors/degree programs from which students would likely enroll in the minor?**

Food sustainability is linked to rapidly growing career opportunities in production agriculture, business, education, and government. Key areas of potential employment for college graduates include food production, food safety, environmental sciences, restaurant and food services, public health organizations, and technology development. Though the outlook of each career path will vary, 'sustainability' careers are growing rapidly.<sup>3</sup> Sustainability is a burgeoning industry that is growing as technology advances and the world's natural resources are expended. The Sustainable Local Foods Minor will provide students with pertinent knowledge and skills that complement their major and prepare them for opportunities to support and meet current and future healthful food production and human

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<sup>1</sup> Locally produced vegetables and fruits.

<sup>2</sup> Household Food Security in the United States in 2017. 2018. United States Department of Agriculture—Economic Research Service. Economic Research Report Number 256.

<sup>3</sup> <https://www.mckinsey.com/business-functions/sustainability-and-resource-productivity/our-insights/sustainability-strategic-worth-mckinsey-global-survey-results>

health needs. Students will be better prepared to develop sustainable food production type businesses.

This minor is available to all students, those enrolled in the Horticulture, Nutrition and Dietetics, and Agronomy disciplines may be most interested.

**5. Describe the workforce demand for graduates in related fields, including national demand and demand within South Dakota.**

In a world committed to feeding a population of 9.77 billion<sup>4</sup> people by 2050, today's agriculturalists face daunting challenges and risks to produce ample supplies of nutritious food without destroying Earth's natural resources and ecosystems. Integrating the knowledge of food production, human health, and environmental sustainability will enhance the skills of SDSU graduates in agronomy, horticulture, and health & nutritional sciences and other related fields and enable them to contribute to feeding a growing global population. Graduates with the Sustainable Local Foods Minor will also contribute to thriving local economies and sustainable livelihoods—throughout South Dakota and the region.

Large corporations such as Walmart, and Costco and large food chains such as Whole Foods have overwhelming success in accessing locally-grown and organically-grown vegetables and animal protein to meet the rapidly growing demand for known-sourced products. Restaurants have added locally grown vegetables and meat to their menu. Urban centers, large and small, are promoting farmers markets as a means of connecting local entrepreneurs to customers.<sup>5</sup> Each of these distribution systems must access trained employees and sources to support their high-value food products.

A U.S. Department of Agriculture report to Congress provides evidence of a growing trend in both the production and consumption of locally-produced food in the U.S.<sup>6</sup> The report concluded that local and regional food sales in the U.S. totaled \$6.1 billion in 2012, an increase from \$4.8 billion reported in 2008. Moreover, local, state and federal agencies are hiring employees to address the growing food security and insecurity issues. Employment opportunities for college graduates who have expertise in food, agriculture, renewable natural resources, or the environment will increase 5% between 2015 and 2020. The United States Department of Agriculture projects 57,900 annual openings for graduates with bachelor's or higher degrees in those areas.<sup>7</sup>

**6. Provide estimated enrollments and completions in the table below and explain the methodology used in developing the estimates.**

The estimates below were developed based on past enrollment figures in new minors and their four-year progression, along with discussions with faculty and administrators regarding interest in the proposed minor.

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<sup>4</sup> United Nations, Department of Economic and Social Affairs, Population Division. 2017. *World Population Prospects: The 2017 Revision*. New York: United Nations.

<sup>5</sup> Report to Congress: Trends in U.S. Local and Regional Food Systems. 2015. United States Department of Agriculture—Economic Research Service. Administrative Publication Number 068.

<sup>6</sup> Report to Congress: Trends in U.S. Local and Regional Food Systems. 2015. United States Department of Agriculture—Economic Research Service. Administrative Publication Number 068.

<sup>7</sup> Employment Opportunities for College Graduates in Food, Agriculture, Renewable Natural Resources, and the Environment. 2015. United States Department of Agriculture. <https://www.purdue.edu/usda/employment/>

	<b>Fiscal Years*</b>			
	<b>1<sup>st</sup></b>	<b>2<sup>nd</sup></b>	<b>3<sup>rd</sup></b>	<b>4<sup>th</sup></b>
<i>Estimates</i>	<b>FY 20</b>	<b>FY 21</b>	<b>FY 22</b>	<b>FY 23</b>
Students enrolled in the minor (fall)	10	20	35	40
Completions by graduates	0	5	15	20

\*Do not include current fiscal year.

**7. What is the rationale for the curriculum? Demonstrate/provide evidence that the curriculum is consistent with current national standards.**

This curriculum is available to all SDSU students and is especially appropriate for students majoring in Horticulture or Nutrition and Dietetics majors. This minor is designed to prepare graduates with basic understanding of horticultural principles and practices, including pest management. These graduates will gain a fundamental understanding of the scope, activities, and processes in the field of local food production practices and be lifelong learners. The curriculum will also be suitable for Horticulture graduates, who will gain considerable knowledge in crop management and production technologies of greenhouse, nursery, fruit, or vegetable crops, and can utilize this minor to add an extra value to their college education. Student who complete the minor will be able to have a basic understanding in food, nutrition, wellness, and management and will be able to promote health and wellness programs, as they communicate with public health agencies, foodservice, food retailers, and food production industries.

This curriculum is designed to provide a balanced knowledge in both areas of Horticulture and Nutrition and Dietetics. Graduates selecting this minor will complement the fundamental knowledge they obtain in their majors. Graduates will be aware of aspects that are harmful to productive ecosystems and will also be aware of aspects that cause deterioration in the quality of food products and will consider practices that elevate the healthiness of produced foods in farm and storage facilities.

The Sustainable Local Foods Minor is unique. Although a Sustainability major and two Sustainability minors exist in the SD regental system, none are focused on food. The current SDSU Sustainability minor prepares graduates to help their employers conserve resources (energy, water, dollars) and improve efficiency. The USD Sustainability major and minor similarly focus on ecological studies of the landscape. The Sustainable Local Foods Minor focuses on the production of healthful foods and increasing awareness of human health needs.

Other academic institutions within the land-grant system also offer minors in food sustainability or sustainability including Michigan State University, Montana State University, and Iowa State University.

<b>Michigan State University Food Minor<sup>8</sup></b>	<b>Montana State University Sustainable Food Systems Option<sup>9</sup></b>	<b>Iowa State University Sustainability Minor<sup>10</sup></b>
<b>Relevant Courses</b>		
Exercise, Nutrition and Weight Control	Basic Human Nutrition	Agriculture, Food and Natural Global Resource Systems
Exercise, Nutrition and Weight Control	Contemporary Consumer Issues	Community Ecology
Food in American Culture	Culinary Marketing: Farm to Table	Ecosystem Ecology
Local Food Producers	Cropping Systems and Sustainable Agriculture	Plants and People
Much Depends on Dinner	Field Crop Production	Sustainable Communities
Nutrition and Evolution	Food System Resilience, Vulnerability and Transformation	Sustainable and Environmental Horticulture Systems
The Anthropology of Food	Market Gardening	The US Food System
What's Food Got to Do with It?	Vegetable Production	Urban Revitalization

**8. Complete the tables below. Explain any exceptions to Board policy requested.**

**A. Distribution of Credit Hours**

<b>Sustainable Local Foods Minor</b>	<b>Credit Hours</b>	<b>Percent</b>
Requirements in minor	11	61%
Electives in minor	7	39%
Total	18	100%

**B. Required Courses in the Minor**

<b>Prefix</b>	<b>Number</b>	<b>Course Title</b>	<b>Credit Hours</b>	<b>New (yes, no)</b>
HO/PS	111-111L	Introduction to Horticulture and Lab	3	No
HO	434	Local Food Production	2	No
NUTR	111	Food, People and the Environment	3	No
NUTR OR	221	Survey of Nutrition (3)	3	No
NUTR	315	Human Nutrition (3)		
Subtotal			11	

<sup>8</sup> <https://sites.lsa.umich.edu/sustainablefoodsystems/academic-programs/minor/>

<sup>9</sup> <http://catalog.montana.edu/undergraduate/education-health-human-development/sustainable-food-bioenergy-systems/sustainable-food-systems-option/>

<sup>10</sup> <http://catalog.iastate.edu/interdisciplinaryprograms/minor/sustainability/#curriculumtext>

**C. Elective Courses in the Minor: List courses available as electives in the program. Indicate any proposed new courses added specifically for the minor.**

Select a minimum of 7 credits from the list below.

Prefix	Number	Course Title	Credit Hours	New (yes, no)
FS	101	Introduction to Food Science	3	No
HO	105	Insects and Society	3	No
HO	329	Horticultural Pests	3	No
HO	411	Fruit Crop Systems	1	No
HO/PS	413-413L	Greenhouse and High Tunnel Mgmt. and Lab	3	No
HO	435	Local Food Production, Harvest and Storage	2	No
HO	444	Vegetable Crop Systems	1	No
HO	447	Organic Plant Production	3	No
NUTR	141-141L	Food Principles and Laboratory	4	No

**D. List any prerequisites for the courses above.**

Students will be able to complete NUTR 315 Human Nutrition (3 cr.) once they complete prerequisite courses CHEM 106 and CHEM 108 or CHEM 112 and CHEM 114. The requirements for the Sustainable Local Foods Minor will allow students to select either NUTR 221 (no prerequisites) or NUTR 315.

**E. Minors typically consist of 18 credit hours, including prerequisite courses. Proposals to establish new minors as well as proposals to modify existing minors must recognize and address this limit. If the minor includes more than 18 credit hours (including prerequisites), provide justification below.**

NUTR 315 has a prerequisite of 8 credits of chemistry. It is anticipated that only students who have already completed NUTR 315 will choose this course as the nutrition course. Other students more than likely will choose NUTR 221 Survey of Nutrition.

**9. What are the learning outcomes expected for all students who complete the minor? How will students achieve these outcomes?**

Upon completion of the Sustainable Local Foods Minor, students will be able to:

1. articulate the impact of different types of fruit and vegetable production systems on the concept of sustainability.
2. recognize that modern food production systems are highly complex in terms of meeting the global demand for food and are driven by many economic, social, and environmental factors.
3. describe how the local production of fruits and vegetables can support local economies and address issues of food insecurity and human health at the same time.
4. experience hands-on activities of planning, growing, storage, preparation, and marketing of food crops.
5. explain the basics of nutrient needs of humans.

The attached curriculum map (Appendix A) shows where students achieve these outcomes in the curriculum.

**10. What instructional approaches and technologies will instructors use to teach courses in the minor?**

Information will be delivered through lectures and experiential laboratories. Experiential labs will provide hands on learning in the field (Local Foods Education Center), high tunnel, greenhouse, and food preparation labs. Students will explore the ways in which plant production systems apply to the real-world environment of plant growth and development in South Dakota’s short growing season.

**11. Delivery Location<sup>11</sup>**

**A. Complete the following charts to indicate if the university seeks authorization to deliver the entire program on campus, at any off-campus location (e.g., UC Sioux Falls, Capital University Center, Black Hills State University-Rapid City, etc.) or deliver the entire program through distance technology (e.g., as an online program)?**

	Yes/No	Intended Start Date
<b>On campus</b>	Yes	2019-2020 Academic Year

	Yes/No	If Yes, list location(s)	Intended Start Date
<b>Off campus</b>	No		

	Yes/No	If Yes, identify delivery methods <sup>12</sup>	Intended Start Date
<b>Distance Delivery (online/other distance delivery methods)</b>	No		

**B. Complete the following chart to indicate if the university seeks authorization to deliver more than 50% but less than 100% of the certificate through distance learning (e.g., as an online program)?<sup>13</sup>**

	Yes/No	If Yes, identify delivery methods	Intended Start Date
<b>Distance Delivery (online/other distance delivery methods)</b>	No		

33% of the Sustainable Local Foods Minor is available online.

**12. Does the University request any exceptions to any Board policy for this minor? Explain any requests for exceptions to Board Policy.**

None

<sup>11</sup> The accreditation requirements of the Higher Learning Commission (HLC) require Board approval for a university to offer programs off-campus and through distance delivery.

<sup>12</sup> Delivery methods are defined in [AAC Guideline 5.5](#).

<sup>13</sup> This question responds to HLC definitions for distance delivery.

**13. Cost, Budget, and Resources: Explain the amount and source(s) of any one-time and continuing investments in personnel, professional development, release time, time redirected from other assignments, instructional technology & software, other operations and maintenance, facilities, etc., needed to implement the proposed minor.**

All courses are currently being taught. SDSU does not require any additional resources to offer this minor.

**14. New Course Approval: New courses required to implement the new minor may receive approval in conjunction with program approval or receive approval separately. Please check the appropriate statement (*place an "X" in the appropriate box*).**

YES,

the university is seeking approval of new courses related to the proposed program in conjunction with program approval. All New Course Request forms are included as Appendix C and match those described in section 7.

NO,

the university is not seeking approval of all new courses related to the proposed program in conjunction with program approval; the institution will submit new course approval requests separately or at a later date in accordance with Academic Affairs Guidelines.



**Appendix A**  
**Sustainable Local Foods Minor – Student Learning Outcomes**

Individual Student Outcomes	*HO/PS 111-111L	*NUTR 111	*NUTR 221 or NUTR 315	*HO 434	FS 101	HO 105	NUTR 141-141L	HO 329	HO 411	HO/PS 413-413L	HO 435	HO 444	HO 447
Students will be able to articulate the impact of different types of fruit and vegetable production systems on the concept of sustainability.	x	x		x				x	x	x	x	x	x
Students will be able to recognize that modern food production systems are highly complex in terms of meeting the global demand for food and are driven by many economic, social, and environmental factors.				x	x	x		x	x	x		x	x
Students will be able to describe how the local production of fruits and vegetables can support local economies and address issues of food insecurity and human health at the same time.		x								x	x	x	
Students will be able to experience hands-on activities of planning, growing, storage, preparation, and marketing of food crops.				x			x		x	x		x	x
Students will be able to explain the basics of nutrient needs of humans.			x										

\*required courses