Program Approval Form

For approval of new programs and deletions or modifications to an existing program.

Action Requested:

- [X] Create New (SCHEV approval required except for minors)
- [ ] Inactivate Existing
- [ ] Modify Existing (check **ALL** that apply)
  - [ ] Title (SCHEV approval required except for minors)
  - [ ] **Concentration** (Choose one): [ ] *Add* [ ] *Delete* [ ] *Modify*
  - [ ] Degree Requirements
  - [ ] Admission Standards/ Application Requirements
  - [ ] Other Changes:

Type (Check one):

- [ ] B.A. [ ] B.S. [X] Minor
- [ ] Master's
- [ ] Ph.D.
- [ ] Undergraduate Certificate*
- [ ] Graduate Certificate*
- [ ] Bachelor's/Accelerated Master's [ ] Other:

College/School: College of Health and Human Services **Department:** Nutrition and Food Studies

Submitted by: Constance Gewa **Ext:** 3-2173 **Email:** cgewa@gmu.edu

Effective Term: Fall 2018 **Please note:** For students to be admitted to a new degree, minor, certificate or concentration, the program must be fully approved, entered into Banner, and published in the University Catalog.

Justification: (attach separate document if necessary)

See separate document below

	Existing	New/Modified
Program Title: (Required) Title must identify subject matter. Do not include name of college/school/dept.		Minor in Food Systems
Concentration(s):		
Admissions Standards / Application Requirements: (Required only if different from those listed in the University Catalog)		
Degree Requirements: Consult University Catalog for models, attach separate document if necessary using track changes for modifications		**Required 12 credits:** NUTR 295 Introduction to Nutrition (3 credits) NUTR 318 Global Nutrition and Food Security (3 credits) NUTR 326 Food Systems (3 credits) NUTR 383 Taste & Place (3 credits) **Electives 3 credits:** NUTR 312/313 Experimental Food & Lab (4 credits) NUTR 410 Food Safety and Defense (3 credits) NUTR 415 Fundamentals of Cooking (3 credits) NUTR 430 Introduction to Wine & Beer (3 credits) NUTR 435 Urban Agriculture (3 credits) ANTH 366 Food and Human Evolution (3 credits) BIOL 385 Biotechnology and Genetic Engineering (3 credits) EVPP 442 Urban Ecosystems and Processes (3 credits) INTS 371 Food Systems & Policy (3 credits) INTS 338 Animal Rights and Human Education INTS 370 Sustainable Food Systems (6 credits) INTS 470 Professional Pathways in Sustainable Food Systems (3 credits) INTS 402 Plants and People- Sustenance, Ceremony, and Sustainability (3 credits) INTS 370 Sustainable Food Systems (3 credits) MBUS 303 Marketing in a Global Economy (3 credits) PHIL 243, PHIL 343 OR PHIL 358 Global Environmental Ethics, Environmental Ethics, or Ethics and Economics (3 credits) TOUR 310 Food and Beverage Management (3 credits)
Courses offered via distance: (if applicable)		
TOTAL CREDITS REQUIRED:		15 Credits

***For Certificates Only:** Indicate whether students are able to pursue on a [ ] **Full-time basis** [ ] **Part-time basis**

Approval Signatures

Department	Date	College/School	Date
	11/27/2017	Frank J. Whittington	11/27/17

If this program may impact another unit or is in collaboration with another unit at Mason, the originating department must circulate this proposal for review by those units and obtain the necessary signatures prior to submission. Failure to do so will delay action on this proposal.

Unit Name	Unit Approval Name	Unit Approver's Signature	Date
ANTHROPOLOGY	Daniel Temple		11/20/2017
BIOLOGY	Larry Rockwood		11/20/2017
ENVIRONMENTAL SCIENCE & POLICY	A. Alonso Aguirre		11-20-17
INTEGRATIVE STUDIES	Kelly Dunne	Kelly Dunne	11.21.17
BUSINESS	Patrick Soleymani		11/20/2017
PHILOSOPHY	Rachel Jones		11/21/2017
TOURISM & EVENTS MANAGEMENT	Susan Slocum		11/27/2017

For Undergraduate Programs only

Undergraduate Council Member | Provost Office | Undergraduate Council Approval Date

For Graduate Programs Only

Graduate Council Member | Provost Office | Graduate Council Approval Date

For Registrar Office's Use Only: Received_____Banner_____Catalog_____

revised 9/2/2016

Proposed Minor in Food Systems
Department of Nutrition and Food Studies
George Mason University

Food Systems: This minor is designed to provide students from a range of disciplines with the knowledge and skills to understand how the food system affects the health of a community (e.g., nutrition, food security, inequity, agriculture, food safety). Students will study the interrelationships within the national and global food systems between such outcomes as the obesity epidemic, food security, and the environmental impact of agriculture.

Issues in the Modern Food System:
Our food comes from a complex juncture of social and biophysical factors and processes through the food supply chain. These include drivers of the food system such as culture, economics, policy, marketing, and interventions. The modern American food system has provided our citizens with an abundance of low-cost food in comparison to other countries, costing just 9.7% percent of disposable income in 2014 (U.S. Department of Agriculture, 2016). However, the direct cost of food does not reflect the external costs that impact the physical, economic, social, and ecological health of the US. The modern food system has simultaneously increased obesity, diet-related diseases, and food insecurity due to an influx of production and consumption of processed foods. By one estimate, the US spent $190 billion on obesity-related healthcare expenses in 2005 (Cawley & Meyerhoefer, 2012). Although total US farm productivity rose nearly 150% during the second half of the twentieth century (National Research Council, 1995), hunger has risen from 5% of US households in 1968 to 12.3% in 2016 (Coleman-Jensen, Rabbitt, Gregory, & Singh, 2017). Research suggests the current use of agricultural pesticides in the US alone produces public and environmental health problems costing an additional $10 billion annually (Pimentel, 2004). Globally, livestock production accounts for an estimated 14.5% of greenhouse gas emissions. The effects of climate change are also expected to reduce the amount of food grown in drought, flood and pest-stricken regions, increasing food cost and insecurity (Gerber et al., 2013).

Program Justification:
Addressing these concerns within the food system requires educating individuals in nutrition, food security, food systems, food and culture, food safety, agriculture, and key concepts in understanding the effects of food and food systems on health status. A Food Systems minor can provide such understanding to students from a range of fields and disciplines, including policy, economics, finance, nutrition, health, chemistry, biology, communications, sociology, anthropology, education, and sustainability.

Interest in food systems has grown in the last decade. There has been a significant increase in food system courses and some rise in undergraduate degrees (Jordan et al. 2014). Currently, no university in either Virginia or D.C. offers an undergraduate major or minor in food systems.

Program:
The undergraduate minor in Food Systems will provide coursework covering the components of the food supply chain, drivers of the food system, and nutrition, health, social, and ecological outcomes. The core requirements begin with a course that provides an introduction to food systems by examining the components and outcomes of the system and their interrelationships. Required coursework also includes Introduction to Nutrition, Global Nutrition and Food Security, and Taste and Place. Students

also have the choice of six credits of electives that focus on food behaviors as the outcome of the complex factors and processes of the food system

Cawley J., & Meyerhoefer C. (2012). The medical care costs of obesity: An instrumental variables approach. *Journal of Health Economics, 31(*1), 219-30.

Coleman-Jensen, A., Rabbitt, M. P., Gregory, C. A. and Singh, A. (September 2017). *Household Food Security in the United States in 2016*, ERR-237, U.S. Department of Agriculture, Economic Research Service.

Gerber, P.J., Steinfeld, H., Henderson, B., Mottet, A., Opio, C., Dijkman, J., Falcucci, A. & Tempio, G. (2013). *Tackling climate change through livestock: A global assessment of emissions and mitigation opportunities.* Food and Agriculture Organization of the United Nations (FAO), Rome.

Jordan, N., Grossman, J., Lawrence, P., Harmon, A., Dyer, W., Maxwell, B., ... & Ahmed, S. (2014). New curricula for undergraduate food-systems education: A sustainable agriculture education perspective. *Nacta Journal*, *58*(4), 302.

National Research Council [NRC]. (1995). *Colleges of agriculture at the Land Grant Universities: A Profile. Committee on the Future of the Colleges of Agriculture in the Land Grant University System.* Washington, D.C.: National Academy Press.

Pimentel, D. (2005). Environmental and economic costs of the application of pesticides primarily in the United States. *Environment, Development and Sustainability, 7*, 229-252.

U.S. Department of Agriculture, Economic Research Service. (2016) *Food Expenditures: Food expenditures by families and individuals as a share of disposable personal income*. Available at: https://www.ers.usda.gov/data-products/food-expenditures.aspx