

Date of request: 29-SEP-2020

Request ID: E-2020-FCS-67

College: E

Department: FCS

Initiator name: Caroline Webber

Initiator email: [caroline.webber@wmich.edu](mailto:caroline.webber@wmich.edu)

Proposed effective term: 202140

Does course need General Education approval?: N

Will course be used in teacher education?: N

If 5000 level course, prerequisites apply to: B

Proposed course data:

New Course FCS 5820

New course selected: This new course is not seeking approval as a general education course.

1. Proposed course prefix and number:  
FCS 5820

2. Proposed credit hours:  
3

3. Proposed course title:  
Food, Nutrition, and Climate Change

4. Proposed course prerequisites:  
None

5. Proposed course corequisites:  
None

6. Proposed course prerequisites that may be taken concurrently (before or at the same time):  
None

7. Minimum grade for prerequisites (default grades are D for Undergrad and C for Grad):  
None

8. Major and/or minor restrictions:  
Include

9. List all the four-digit major and/or minor codes (from Banner) that are to be included or excluded:  
FOSJ, NDDJ. Please enter new code for MS in Nutrition & Dietetics, likely NDDM.

10. Classification restrictions:

Include

11. List all the classifications (freshman, sophomore, junior, senior) that are to be included or excluded:

SR

12. Level restriction:

Include

13. List the level (undergraduate, graduate) that is to be included or excluded.

GR

14. Do prerequisites and corequisites for 5000-level courses apply to undergraduates, graduates, or both?

Both

15. Is this a multi-topic course?

No

16. Proposed course title to be entered in Banner:

Food, Nutrition Climate Change

17. Is this course repeatable for credit?

No

18. Is this course mandatory credit/no credit?

No

19. Select class type:

Seminar

20. How many contact hours per week for this course?

3

A. Please choose Yes or No to indicate if this class is a Teacher Education class:

No

B. Please choose the applicable class level:

Both

C. Please respond Yes if this is a current general education course and/or a course being submitted for the new WMU Essential Studies program. Please respond No if it is neither.

No

D. Explain briefly and clearly the proposed improvement.

The proposed improvement is to create a new course: FCS 5820 Food, Nutrition, and Climate Change

E. Rationale. Give your reason(s) for the proposed improvement. (If your proposal includes prerequisites, justify those, too.).

FCS 5820 Food, Nutrition, and Climate Change is one of two new courses proposed as part of the M.S. in Nutrition and Dietetics program. These courses will provide more course options for our students. Sustainable food systems (SFS) and the relationship between food (production through consumption and waste) and climate change are of current and growing interest in the dietetics profession. The topic is fast becoming mainstream: professional organizations, including the Academy of Nutrition and Dietetics, the Society for Nutrition Education and Behavior, and the American Society for Nutrition have position statements and have devoted member divisions to it. Since 2009 the WMU graduate dietetic internship supervised practice (FCS 6230) has chosen SFS as its emphasis area, and so an academic course devoted to food and environmental concerns fits the program's values and interests. While “sustainability” was the term of choice a decade or more ago, we realize now its interconnectedness with climate change mitigation, so “sustainability”, “SFS”, and “climate change” are all used on this form. FYI, reducing food waste and meat consumption are #3 and #4 on the list of ways, by impact, to address climate change (Project Drawdown).

F. List the student learning outcomes for the proposed course or the revised or proposed major, minor, or concentration. These are the outcomes that the department will use for future assessments of the course or program.

By the end of this course students will be able to:

1. Describe and discuss basic vocabulary and concepts related to climate change, food system components, food security, and public health nutrition;
2. Demonstrate ability to use evidence to analyze relationships between food system components, dietary quality, and planetary boundaries;
3. Propose and justify a new policy intervention to positively impact one aspect of food, nutrition, or public health while reducing stress on an environmental factor related to climate change.

G. Describe how this curriculum change is a response to student learning assessment outcomes that are part of a departmental or college assessment plan or informal assessment activities.

SFS (Sustainable Food Systems) has been a part of our graduate dietetic internship program since 2009. Many applicants have expressed demonstrated interest in this area. A survey of all grad students taken at the end of the two-semester FCS 6230 sequence is done each year. It includes a question about the hands-on SFS component of the program. On a scale of 1-5 (5 = exceeded expectations, 4 = met expectations, 3 = did not meet expectations in minor ways but still worthwhile, etc), the results for the past five years, including responses from 100% of students, are: 4.4 (2020); 3.8 (2019), 4.7 (2018), 4.3 (2017), 4.4 (2016).

The course was offered for the first-time last year as a FCS 5220 Topics course, and it attracted nine students: 8 graduate dietetics students and 1 senior in food service operations and sustainability. Feedback included: “I think offering the climate change course to all interns (first-year grad students) as an option would be nice. It was such a great supplemental course for me.” “This class is really unique and will definitely be more and more relevant as time goes on.” WMU course evaluation based on 3 out of 9 students yielded: overall instructor and course; = 4.67; responses to other questions received similar scores.

H. Effect on other colleges, departments or programs. If consultation with others is required, attach evidence of consultation and support. If objections have been raised, document the resolution. Demonstrate that the program you propose is not a duplication of an existing one.

We are not aware of any evidence that FCS 5820 Food, Nutrition, and Climate Change will duplicate an existing course. The course content crosses a number of disciplines (nutrition, public health, environmental science, policy) but it's focus is unique on campus just as the topic is of current and increasing interest. It will be available to seniors and graduate students from any department. The new graduate Certificate Program in Climate Change Policy and Management, housed in the Political Science Department, is considering adding the course to its list of electives. (See e-mail from Paul Clements.) There has also been unsolicited unofficial interest from the Anthropology Department for advertising the course to its students. Service Operations and Sustainability students may also want to sign up as they have previously.

I. Effect on your department's programs. Show how the proposed change fits with other departmental offerings.

There is no evidence that this course will affect the Department's other programs. The other graduate courses in Nutrition and Dietetics focus on clinical skill building, nutritional science, and life course nutrition. This is the only course with a public health and environmental nutrition perspective.

J. Effects on enrolled students: are program conflicts avoided? Will your proposal make it easier or harder for students to meet graduation requirements? Can students complete the program in a reasonable time? Show that you have considered scheduling needs and demands on students' time. If a required course will be offered during summer only, provide a rationale.

We plan to offer the course once a year, likely Spring semester, but it would work in another semester or session if necessary. Those students taking the course as part of the M.S. in nutrition and dietetics would take this during the second year of the program where there is more scheduling flexibility. The course will be offered online as non-synchronistic, a very flexible format for students' schedules. Providing adequate courses so that students don't need to go outside the discipline will make it easier for M.S. students in Nutrition and Dietetics to meet graduate requirements within their direct sphere of program interest.

K. Student or external market demand. What is your anticipated student audience? What evidence of student or market demand or need exists? What is the estimated enrollment? What other factors make your proposal beneficial to students?

We anticipate that a minimum of 10 students per year from the proposed the M.S. in nutrition and dietetics will enroll. We expect to draw several more students Food Service Operations and Sustainability and from across campus including those in the new Certificate Program in Climate Change Policy and programs within the College of Arts and Sciences. (Please see sections "H" and "E" above.)

L. Effects on resources. Explain how your proposal would affect department and University resources, including faculty, equipment, space, technology, and library holdings. Tell how you will staff additions to the program. If more advising will be needed, how will you provide for it? How often will course(s) be offered? What will be the initial one-time costs and the ongoing base-funding costs for the proposed program? (Attach additional pages, as necessary.) The only effect on resources would be paying a part-time instructor to teach the course since the department has recently lost the

tenured faculty member who would have taught the course to early retirement. Finding a qualified instructor to teach this online course would not be difficult. The one-time cost of course design was already paid last year. No extra technology or space is required nor library holdings. This 3-credit course would likely be offered once a year. No additional advising is needed.

M. With the change from General Education to WMU Essential Studies, this question is no longer used.

For courses requesting approval as a WMU Essential Studies course, a syllabus identifying the student learning outcomes and an action plan for assessing the student learning outcomes must be attached in the Banner Workflow system.

Not Applicable

N. (Undergraduate proposals only) Describe, in detail, how this curriculum change affects transfer articulation for Michigan community colleges. For course changes, include detail on necessary changes to transfer articulation from Michigan community college courses. For new majors or minors, describe transfer guidelines to be developed with Michigan community colleges. For revisions to majors or minors, describe necessary revisions to Michigan community college guidelines. Department chairs should seek assistance from college advising directors or from the admissions office in completing this section.

Transfer agreements will not be impacted.

O. Current catalog copy:

Not applicable. This is a new course.

P. Proposed catalog copy:

This course will explore relationships between food systems, food security, and environmental forces related to climate change, and their impact on human nutrition and dietary quality. Students will also consider how public policy can impact these relationships and outcomes at local, national, and international levels.

Credits: 3 hours

Note: Open to seniors and graduate students only. Some background in biology, biochemistry, or nutrition is recommended but not required.

Department Curriculum Chair approver: Mary Beth Kennedy Janssen

Department Curriculum Chair comment:

Date: 10-OCT-2020

Department approver: Suzan Ayers

Chair comment:

Date: 13-OCT-2020

### FCS 5860 –2020 Course Schedule & Assessment

\*THE INSTRUCTOR RESERVES THE RIGHT TO CHANGE OR MODIFY COURSE MATERIALS AND THE SCHEDULE\*

If there is a discrepancy between this schedule and the online course, go with what's online unless you are told otherwise, but please let me know, too.

Week Module	Week Starts 2020:	Topic Assignments & due dates	Reading assignment for class
1	Jan 6	Introduction to Climate Change, Food, and Nutrition	<p>Listen: Introduction Intergovernmental Panel on Climate Change (IPCC), Climate <b>Read:</b> Levin, Parsons. 7 Things to Know About the IPCC's Special Report on Climate Change and Land. (Aug 8, 2018)</p> <p><b>Listen:</b> Lancet Podcast (21') – summary of Report's conclusions (1/17/2019)</p> <p><b>Look over:</b> U.N. Sustainable Development Goals – take a look</p> <p><b>Read:</b> Foer, JS. "Not a Good Story," from <i>We Are the Weather</i> (5 pages) (2019) <b>Read:</b> Ronson J. "The 10 Ways We Can Fix Climate Change." <a href="https://elearning.wmich.edu/d2l/le/content/390955/viewContent/3527100/View">https://elearning.wmich.edu/d2l/le/content/390955/viewContent/3527100/View</a></p>
		<b>DISCUSSION BOARD</b> assignment ( <b>MOD1-D</b> ): The Challenge of Climate Change Acceptance and Action – see directions. Initial post by Thursday, respond to one classmate's post by Sunday, Jan 12.	
2	Jan 13	Climate Change and Planetary Boundaries	<p>Module 2 aural introduction and Climate Generation ppt slides: <i>Climate Change: The Basics</i>. <b>Read:</b> Rockström, A Safe Operating Space for Humanity. <i>Nature</i>. Vol 461, Sept 24, 2009.</p> <p><b>Watch:</b> A Climate Minute – The Greenhouse Effect (2') (big picture) <b>Watch:</b> Denning. Greenhouse Effect Video (7') (at molecular level)</p> <p><b>Read:</b> A few UN climate change landmark institutions (course website) <b>Read:</b> Excerpts from Dow and Downing, <i>The Atlas of Climate Change: Mapping the World's Greatest Challenge</i>. Available via WMU Library and course website. Part 1; Part 2; Part 3 sections 12, 13, 16 <b>Read:</b> Coulomb D. Global warming; A key issue for refrigeration and air conditioning. <i>Energy Learning Journal</i>, U.N. <a href="https://www.energy-learning.com/index.php/archive/86-global-warming-a-key-issue-for-refrigeration-and-air-conditioning">https://www.energy-learning.com/index.php/archive/86-global-warming-a-key-issue-for-refrigeration-and-air-conditioning</a></p>

			<b>Read:</b> Baron J. Climate Change Could Make the Great Lakes Region Unrecognizable. WMU News. Jan 30, 2019. <a href="https://wmich.edu/news/2019/01/51387">https://wmich.edu/news/2019/01/51387</a>
		<b>Module 2 (MOD2-Q):</b> Term Review <b>QUIZ</b> to be submitted by Sunday night, January 19.	
3	Jan 20	Food Systems	<p><b>Listen/View:</b> Module 3 Introduction + 12 slides</p> <p><b>Read:</b> Tagtow and Harmon, Healthy Land, Healthy Food &amp; Healthy Eaters, pp. 1-4</p> <p><b>Read:</b> Excerpts from Dow and Downing, <i>The Atlas of Climate Change: Mapping the World's Greatest Challenge</i>. Part 3, sections 14, 15.</p> <p><b>Read:</b> Excerpts from Millstone and Lang, <i>The Atlas of Food: Who Eats What, Where, and Why</i>. Available online via WMU Library and PDF copy on course website. Part 2 sections 10, 11, 15, 17, 23; Part 3 section 28; Part 4 sections 32, 33.</p> <p><b>Read:</b> Foer JF. Appendix in <i>We Are the Weather</i>, pp. 227-232. PDF copy on website.</p> <p><b>Read:</b> Nestle M. Introduction to <i>Food Politics: How the Food Industry Influences Nutrition and Health</i>. "The U.S. Food Industry," pp. 9-end. The entire Introduction is good if you have time to read it. Available online via WMU Library and also PDF on course website.</p> <p><b>Watch:</b> Americans waste up to 40 percent of the food they produce (4'35")</p>
		<b>DISCUSSION board (Mod3-D)</b> – applying the Rockström model to food systems. Please post by midweek, then reply to at least one other post by Sunday night, January 26.	
4	Jan 27	Healthy Diets	<p><b>Listen/View:</b> Module Introduction and powerpoints</p> <p><b>Read:</b> Willett et al. Food in the Anthropocene: the EAT-Lancet Commission on healthy diets from sustainable food systems. pp. 453-460 (Section 1: Healthy diets). Look over key parts of Executive Summary (Key Messages, Glossary) and first part of Introduction Food, planet and health.</p> <p><b>Review:</b> U.S. Dietary Guidelines 2015-2020 <a href="https://health.gov/dietaryguidelines/2015/guidelines/">https://health.gov/dietaryguidelines/2015/guidelines/</a></p>
		<b>ASSIGNMENT: (MOD4-A)</b> Healthy Diets, <b>due Sunday, Feb 2</b>	
5	Feb 3	Climate Change and Environmental Degradation I	<p><b>Listen/View:</b> Module Introduction</p> <p><b>Read:</b> Willett et al. Food in the Anthropocene: the EAT-Lancet Commission on healthy diets from sustainable food systems, pp. 460-467 (Section 2: Sustainable food production)</p> <p><b>Watch:</b></p> <p>The Green Revolution: Waging a War Against Hunger (10'4")  <a href="https://www.youtube.com/watch?v=HucSCNQ01X4">https://www.youtube.com/watch?v=HucSCNQ01X4</a></p> <p>How Earth's Population Exploded (5'30")  <a href="https://www.youtube.com/watch?v=U7l8imwtMkY">https://www.youtube.com/watch?v=U7l8imwtMkY</a></p>
		<b>Complete:</b> Module 5 Healthy Food <b>Quiz (MOD5-Q)</b> based on Module 4 Assignment by <b>Feb 9<sup>th</sup></b>	

6	Feb 10	Climate Change and Environmental Degradation II	<p><b>Listen/View:</b> Module Introduction / Module 6 Lecture</p> <p><b>Read:</b>          Willett et al. Food in the Anthropocene: the EAT-Lancet Commission on healthy diets from sustainable food systems, pp. 467-470 (Section 2: Sustainable food production)          Shanley, K. Climate Change and Water Quality: Keeping a Finger on the Pulse          Arnold et al Respond. AJPH Letters and Responses. <i>Am J Public Health</i>. 2017. 107(1) pp 10-11.          Evich, H. The great nutrient collapse. <i>Politico</i>. Nov 13, 2017.          Hidden shift of the ionome of plants exposed to elevated CO2 depletes minerals at the base of human nutrition (Loladze, I., 2014)</p> <ul style="list-style-type: none"> <li>○ Read: Introduction</li> <li>○ Scan: pp. 10-14</li> </ul> <p><b>View:</b> TED Talk: The “dead zone” of the Gulf of Mexico (11’)</p>
		<p><b>Module 6 Quiz (MOD6-Q)</b> based on terms from Modules 5 &amp; 6 reading, <b>due Sunday, Feb 16th</b></p> <p><b>Discussion Board (MOD6-D):</b> Environmental Components covering Modules 5 &amp; 6. Post your Initial Post by <b>Thursday, Feb 13</b>, and Responses by <b>Sunday, Feb 16</b>.</p>	
7	Feb 17	Achieving Health Diets in the Doughnut	<p><b>Listen/View:</b> Module Introduction/Module 7</p> <p><b>Read:</b>          Willett et al. Food in the Anthropocene: the EAT-Lancet Commission on healthy diets from sustainable food systems, pp. 470-476 (Section 3: Achieving healthy diets from sustainable food systems)          Raworth. A Safe and Just Space for Humanity. Oxford. 2012.</p> <p><b>Watch:</b>          Raworth. Introducing 'The Doughnut' of social and planetary boundaries for development.</p> <p><b>View:</b> Powerpoints related to Raworth’s planetary “doughnut”</p>
		<p><b>Assignment: (MOD7-A)</b> Boundaries, Doughnuts, and Diets (BDB) based on the food group you started with. This can include a graphic depicting doughnut. Then Post on Discussion Board.          Due Sunday, Feb 23</p>	
8	Feb 24	The Great Food Transformation	<p><b>Listen/View:</b> Module Introduction/Module 8 Lecture</p>



			<p><b>Read:</b> Willett et al. Food in the Anthropocene: the EAT-Lancet Commission on healthy diets from sustainable food systems, pp. 476-485 (Section 4: Framework for a Great Food Transformation)</p> <p><b>Listen:</b> Dr. Walter Willett, primary author of E.A.T.-Lancet Food in the Anthropocene report, conducted with the Division of Sustainable Food Systems, Society for Nutrition Education and Behavior (SNEB), in April 2019. You will receive the link – in process.</p> <p>Review Dr. Willett’s slides. Best done before and while listening to him speak (above).</p>
		<b>Discussion Board (MOD8-D):</b> BDB - Peer Review	
	Mar 2	<b>Spring Break</b>	
9	Mar 9	Alternative Views	<p><b>Listen/View:</b> Module Introduction/Module 9 Lecture</p> <p><b>Read:</b> Jonathan Safran Foer., Appendix. <i>We are the Weather</i>. Individual 1-2 article(s) of choice (list of options to come) or choose your own as long as it has a developed argument and is, by your standards, a legitimate source.</p>
		<b>Discussion Board (MOD9-D):</b> Alternative Views based on an article of your choosing or from a list to be provided.	
10	Mar 16	Policy Tools	<p><b>Listen/View:</b> Module Introduction and powerpoints</p> <p><b>Read:</b> Bardach, Eugene. A Practical Guide for Policy Analysis: The Eightfold Path to More Effective Problem Solving. Specific pages to be announced, but it is a significant part of the book. It is not technical.</p>
	<p><b>Submit by Sunday, March 22:</b></p> <ul style="list-style-type: none"> <li>For Module 11, review dietary guidelines from a list of countries that will be provided. A list of points to consider will be provided.</li> <li>For Module 12, choose a paper having to do with food/nutrition policy and plan to read and review it using <i>the Eight-Step Path of Policy Analysis</i> as a guide. Details to follow, as well as the list of papers to chose from.</li> </ul> <p><b>Submit</b> Final Project proposal (not the project itself); guidelines to follow.</p>		
11	Mar 23	National Dietary Guidance	<p><b>View:</b> Module Introduction</p> <p><b>Read:</b> Reading will be determined based on specific country of focus (country to be determined by student/instructor in Module 10)</p>
	<b>Assignment (MOD11-A):</b> Make country selection in Module 10, submit Assignment by <b>Thursday night, March 26.</b>		

	<b>Discussion (MOD 11-D):</b> Respond to other submissions by Sunday, March 29. Read them all, then choose two to comment on. <b>Due Sunday, March 29.</b> Please Reply to (at least) two comments.		
12	Mar 30	Policy Case Studies	<b>Listen/View:</b> Module Introduction  <b>Read:</b> A list of articles will be provided to choose from <u>in Module 10</u> , and you choose one (or you can choose your own article). Read the article and then see if you can apply the Eightfold Path of Policy Analysis to explain how the policy was decided on and if it was successful.
	<b>Assignment MOD12-A Policy Case Studies:</b> Details to follow, but you will report on the article you read above, what it was about, how it addressed food or nutrition or public health within some aspect of the planetary boundaries/ doughnut. I'd like you to critique it using the Eight-Step Path of Policy Analysis and see what happens. How and why was that policy decided on? Was it successful? <b>Submit by Thursday, April 2</b> and also post to the Discussion Board.  <b>Discussion (MOD12-D):</b> Respond to other submissions by <b>Sunday, April 5</b> . View them all, then choose one to comment on. Be sure everyone receives (at least) one comment.		
13	Apr 6	Nutrition Education	<b>Listen/View:</b> Module Introduction  <b>Read:</b> Shannan J and Knowlton K. The need for climate and health education. <i>Am J Public Health</i> . Sup 2, Vol 108, No 52, 566-567. Kreslake JM et al. The critical roles of health professionals in climate change prevention and preparedness. <i>Am J Public Health</i> . Sup 2, 2018, Vol 108, No 52, 568-569. Gifford R. The dragons of inaction: Psychological barriers that limit climate change mitigation and adaptation. <i>Am Psychologist</i> . May-June 2011; vol 66(4), 290-302. Kreslake JM. Developing effective communication materials on the health effects of climate change for vulnerable groups: a mixed methods study. <i>BMC Public Health</i> . 2016 Vol16, 946. 15 pages.
		<b>Submit: Final Project</b> - Policy Proposal via Dropbox. Then post to Discussion Board Due: Sunday night, April 12	
14	Apr 13	Project Presentations	<b>View:</b> Module 14 Summary
		<b>Submit Responses to Discussion Board:</b> Final Project Peer Review – specifics to come.  NO FINAL EXAM IS PLANNED.	

WEIGHT	GRADING
10%	Quizzes: Modules 2, 5, 6
25%	Discussion Board: Modules 1, 3, 6, 8, 9, 11
30%	Assignments (turned into Dropbox): Modules 4, 7, 11, 12
<u>35%</u>	Final Project: Due end of Module 13, continues to Module 14.
100%	TOTAL POINTS

Note that from time to time you will be asked to choose a topic or article in one module even though the assignment isn't due until a future module.