

Class **OUTLINE** 11:020:436 Sustainable Agriculture. (3 credits)

TIME: Monday's 1st and 2nd period 9:15 to 12:15

Location: IFNH (Institute for Food Nutrition and Health) room 205 on Cook Campus, SEBS and at the EARTH Center – Davidson Mill Pond Park, 42 Riva Avenue, South Brunswick, NJ 08902 (10 to 15 minutes south of the New Brunswick campus off of route #130 south. Take route one south to route #130 south.)

Instructor: Professor Bill Hlubik

Assistant Instructors: Professors Ray Samulis and Madeline Flahive Di-Nardo and Teaching Assistant Gillian Armstrong

Student Grading and Assessment- Students assessment will include the following:

35%	Participation in class discussions, attendance, reading assignments, on-line assignments
20%	Mid-term
35 %	Class Project / Paper/ Presentation
10%	Final Review

Final Grades:

A= 90-100 %, B= 80-89 %, C= 70-79 %, D= 60-69 %, F = <60%

Class & Date & Location	Topic/ Instructors/ Times	Notes: Assignments
1. Session One – September 11, 2017 at 9:15 to 12:15	<p>Introductions& Expectations</p> <p>Introductions and Overviews - Professor Bill Hlubik (60 to 80 minutes)</p> <ol style="list-style-type: none"> Professors and Students – introductions – Overview of course requirements and expectations – Sakai site and resources - Weekly reading assignments and class discussions Definitions – Sustainable Agriculture, Organic Agriculture, Conventional Agriculture, <p>---BREAK ----</p> <ol style="list-style-type: none"> Sustainable Agricultural Systems Group Discussion and Questions : Review of student survey results Class projects, participation & homework 	<p>Readings before class to prepare for discussion</p> <p>Homework Assignment: Complete Personal experience hand-out to be handed in via email to Professor Hlubik</p>

<p>2. Session Two – September 18, 2017 9:15 to 12:15</p>	<p><u>Climate, Weather and Water</u> Dave Robinson and Sal Mangiafico</p>	
<p>3. Session Three – September 25, 2017</p>	<p><u>Soils and Natural Resource Conservation</u> <i>Rich Shaw, NRCS</i></p>	
<p>4. Session Four –October 2, 2017</p>	<p><u>Energy Inputs and Returns - Feeding Local/ Feeding the World</u> Zane Helsel, Bill Hlubik</p>	
<p>5. Session Five – October 9, 2017</p>	<p><u>Pests: Weeds, Disease, Insects</u> George Hamilton, Peter Oudemans, Kris Holmstrom</p>	
<p>6. Session Six – October 16, 2017</p>	<p><u>Economic Factors Impacting Sustainability</u> Madeline Flahive DiNardo, Gillian Armstrong, Bill Hlubik Farmer Guest Speaker</p>	
<p>7. Session Seven – October 23,2017</p>	<p><u>Field Trip: Giamarese Farms – Small Sustainable Preserved Farm</u> Bill Hlubik, Madeline Flahive Di-Nardo and Gillian Armstrong</p>	
<p>8. Session Eight – October 30, 2017</p>	<p><u>Field Trip #2 Ridgepoint Farms</u> Bill Hlubik, Madeline Flahive Di-Nardo and Gillian Armstrong</p>	<p>Saturday 11/4 Field Trip to Cancelled will reschedule</p>
<p>9. Session Nine – November 6,2017</p>	<p><u>Controlled Environment Agriculture/Vertical Farming techniques for high value crops</u> Dave Specca and AJ Both</p>	

10. Session Ten – November 13, 2017	<u>Genetics Diversity, GMO's, Classic Gen</u> Bill Hlubik, Bill Hallman, Dean Goodman	
11. Session Eleven – November 20, 2017	<u>Next Generation of Farmers/ Land Availability</u> Ray Samulis and Bill Hlubik and Gillian Armstrong	
12. Session Twelve – November 27, 2017	<u>Presentations/Papers</u>	
13. Session Thirteen – December 4, 2017	<u>Presentations/Papers</u>	
14. Session Fourteen- December 11,2017	<u>Review</u>	

Class Discussion and Participation ---- class discussion will be an integral component of each and every class. Students are expected to complete reading assignments before attending class in order to prepare for a robust discussion on the topic.

"Sustainable agriculture" was addressed by Congress in the 1990 "Farm Bill" [Food, Agriculture, Conservation, and Trade Act of 1990 (FACTA), Public Law 101-624, Title XVI, Subtitle A, Section 1603 (Government Printing Office, Washington, DC, 1990) NAL Call # KF1692.A31 1990]. Under that law, "the term sustainable agriculture means an integrated system of plant and animal production practices having a site-specific application that will, over the long term:

- satisfy human food and fiber needs;
- enhance environmental quality and the natural resource base upon which the agricultural economy depends;
- make the most efficient use of nonrenewable resources and on-farm resources and integrate, where appropriate, natural biological cycles and controls;
- sustain the economic viability of farm operations; and
- enhance the quality of life for farmers and society as a whole."

[*Subchapter I: Findings, Purposes, and Definitions*, U.S. Code, Title 7, Chapter 64-Agricultural Research, Extension and Teaching, Available at GPO Access:

http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=browse_usc&docid=Cite:+7USC3103 (8/23/07)]

<https://www.nal.usda.gov/afsic/sustainable-agriculture-definitions-and-terms>

The word "sustain," from the Latin *sustinere* (*sus-*, from below and *tenere*, to hold), to keep in existence or maintain, implies long-term support or permanence. As it pertains to agriculture, sustainable describes farming systems that are "capable of maintaining their productivity and usefulness to society indefinitely. Such systems... must be resource-conserving, socially supportive, commercially competitive, and environmentally sound." [John Ikerd, as quoted by Richard Duesterhaus in "Sustainability's Promise," *Journal of Soil and Water Conservation* (Jan.-Feb. 1990) 45(1): p.4. NAL Call # 56.8 J822]

<http://www.westernsare.org/About-Us/What-is-Sustainable-Agriculture>

Sustainable agriculture can be defined in many ways, but ultimately it seeks to sustain farmers, resources and communities by promoting farming practices and methods that are profitable, environmentally sound and good for communities. Sustainable agriculture fits into and complements modern agriculture. It rewards the true values of producers and their products. It draws and learns from organic farming. It works on farms and ranches large and small, harnessing new technologies and renewing the best practices of the past.

Sustainable agriculture defined

In short Sustainable Agriculture is:

- Economically Viable: If it is not profitable, it is not sustainable.
- Socially Supportive: The quality of life of farmers, farm families and farm communities is important.
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- Ecologically Sound. We must preserve the resource base that sustains us all.