
Syllabus



- Summary -

Course Title	Future of Food
Course No.	(EVSC 01.122)
CRN	
Section	1
Start/End Dates	MW 5:00 - 6:15pm
Term/Module	



- Course Description -

Agriculture has an enormous impact on natural systems. In fact, some argue that human impact on climate began with the early farming and resultant population growth. This course will explore the impact of food production on the earth, including soils, water, and climate. It will also address nutritional aspects of crops and livestock, use of crops (human food, animal feed, biofuels), and growing methods (fertilizer and pesticides). Finally, the future of food, with respect to the types of crops likely to be grown under changing climates, and the ability to serve the nutritional needs of an unprecedented population, will also be examined



- Instructor -

Name	Dr. Beth Christensen
Email	christensenb@rowan.edu
Phone	856- 256- 5251
Office Hours	Wednesday 3- 3:30; 4:20 - 4:50*

*Please note that due to the COVID-19 Pandemic, office hours will be held virtually. Dr. Christensen will be available her personal Webex room for meetings with students during office hours (<https://rowan.webex.com/meet/christensenb> or by appointment)

Contacting the Instructor: I am available online for office hours and by email. I will generally respond within 24 hours, unless it is a weekend or holiday. Please follow professional protocols for e-mail (<https://writingcommons.org/article/e-mail-guidelines-for-students/>).



- Objectives -

- **Objective 1: Food as an environmental system-** Students will be able to describe the fundamental elements of food production, including water, soils, nutrients, crops, and livestock production.
- **Objective 2: Agrochemicals–** Students will know the chemicals used in industrial farming, including pesticides/ herbicides, and fertilizers, as well as the effect on the quality and safety of the food they produce.
- **Objective 3: Environmental impact of farming on natural systems–** Students will be able to connect the impact of farming to natural systems, focusing on the impact of agriculture on water, soil, biodiversity, and climate. Students will be conversant in the newer farming methods, such as urban agriculture, hydroponics, and GMO's.
- **Objective 4: The Future of Food–** Students will analyze sustainable solutions to agriculture, and consider approaches suitable for a changing climate and a burgeoning global population. Students will summarize their results in a paper and present their solutions to the class.

Rowan Core (General Education)

All first year, non-transfer student who entered Rowan on or after Fall 2018 must complete

All first-year, non-transfer student who entered Rowan OR after Fall 2018 must complete the new general education requirements, known as Rowan Core. (Students who arrived before Fall 2018—and all new transfer students—are still following the existing general education requirements.) Students in Rowan Core must complete course requirements in six literacies: Artistic, Communicative, Global, Humanistic, Quantitative and Scientific. The Future of Food is a course that satisfies the Scientific Literacy.

All students in this course will be assessed on the following Rowan Core Outcomes for this literacy:

- Students can demonstrate knowledge of core ideas and vocabulary of science and the scientific method in written and/or oral work.
- Students will apply scientific data to solve a real-world problem.
- Students will compose and critique scientific arguments as presented in both popular media and scientific literature as well as compose their own

For details on the new Rowan Core requirements, please consult your advisor or the Undergraduate Catalog (<https://sites.rowan.edu/catalogs/>).



- Texts and Materials -

- Sheaffer, C.C., Moncada, K.M. 2012. *Introduction to Agronomy: Food, Crops, and Environment*, 2nded. ISBN: 978-1-111-31233-6



- Schedule -

Week	Date	Day	Topic	Reading
1	9/2	W	Introduction to the course and	Read Chapter 2

agriculture basics

2	9/9	W	Botany for farmers: Plant anatomy and Physiology	Read Chapters 7 and 8 Week 1 journal entry due before class
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Module 1: Food as an environmental system

3	9/14	M	Crop Survey	Read Chapter 4
	9/16	W	Food and Energy	Read Chapters 5 and 6 Week 2 journal entry due before class
				Read Chapter 10
4	9/21	M	Precipitation and Temperature	Pick a focus area for your research project – submit on Canvas.
	9/23	W	Soils	Read Chapter 12 Week 3 journal entry due before class
5	9/28	M	Livestock Production	Read TBD
	9/30	W	Finding sources for Research Projects	Week 4 journal entry due before class
				Take the Academic Honest Self-Test at:
6	10/05	M	In-class workshop for part 1 of Research Project	https://www.rowan.edu/InstructionalMedia/CBB/ (https://www.rowan.edu/InstructionalMedia/CBB/) Upload your completed certificate to Canvas before class

10/7 W Module 1 Exam

Module 2: Agrochemicals system

7	10/12 M	In-class work on Part I of Research Project	Week 6 journal entry due before class
			Read Chapter 11
	10/14 W	Agroecology	Part 1 of Research Project due 10/14 by midnight on Canvas.
8	10/19 M	Cropping Systems	Read Chapter 13
			Read parts of Chapter 12
	10/21 W	Fertilizers	Week 7 journal entry due before class
9	10/26 M	Herbicides	Read Chapter 15; pages 407 - 435
		Scientific Approaches to Problem Solving	In class activity
	10/28 W		Week 8 journal entry due before class
10	11/4 M	Module 2 Exam* dates change from original syllabus from this point forward	

Module 3: Environmental Impact of Farming on Natural Systems

Read Chapter 16; pages 440-441, "Bacteria" heading starting on page 448, "Viruses" heading on page 450, "Urban Agriculture" heading on page 453, "Nematodes" heading on page 453, pages 456-469

11/9 W Urban Agriculture
See Week 10 Overview Document for required reading and class activities
Week 10 journal entry due

11 11/11 M Organic Agriculture
See Week 11 Overview Document for required reading and class activities

11/16 W How is climate change changing the agricultural landscape? How do agricultural emissions contribute to climate change?
See Week 12 Overview Document for required reading and class activities
Week 11 journal entry due

12 11/18 M **Module 3 Exam Part 2 of Research Project due before class.**

Module 4: The Future of Food

11/23 W Improving plants:
Spotlight on
GMO's

13 11/25 M Self directed work on projec

11/30 W Plants and pollinators
Spotlight on

14	12/2	M	Feeding a growing world mariculture	
	12/7	W	Feeding a growing world	
15	12/9	M	Begin presentations	Research Project Papers due Presentations due
	12/14	M	Final- Monitor Canvas	

Note: syllabus is subject to change. Monitor Canvas for updates including weather impacts.



- Assignments -

The course is structured around a research project, constructed in 4 parts. You will have journal assignments to help you build towards the final project, due at the end of the semester. Due dates are likely to change from the dates in the Schedule, above.

Research Project Paper and Presentation

Early in the semester, you will select a region (county) within the U.S. and spend the rest of the semester determining suitable and sustainable agriculture solutions for that region. The project will culminate in a 12-page paper and a presentation to the class.

Research Project: This project will be broken into several smaller assignments to help you collect information and formulate ideas. As the semester progresses, I will give you more detailed rubrics for these assignments. See the list below for a general summary of the assignments associated with the research project.

Assignment 1: You will submit a 2-page summary of the soil properties and the most prominent crops grown in your focus region. This assignment should also summarize any important livestock and/or aquaculture presence in the region. To complete this assignment, you will need to use federal/state/municipal sources and possibly some scientific sources.

Assignment 2: You will consider water use and climate change in your region and identify the

Assignment 2: You will consider water use and climate change in your region and identify the best commercial crops for that region into the future. This research will require you to gather data from government documents, scientific sources, and possibly popular media. Climate change may not be documented in the scientific literature for all regions, so newspapers will be an important source of information locally.

Assignment 3: You will complete the draft of your research paper adding in your thoughts on possible ways that agricultural practices can be improved in your region. Possible topics you can explore could include (but aren't limited to) changes to tillage practices, cropping systems, soil management, and agrochemical applications.

Assignment 4: You will prepare a short (4- 5 minute) presentation on your recommendations for sustainable agriculture solutions for your assigned region, following a rubric that I will provide to you.



- Policies -

Student Responsibilities:

- Safety is paramount. Wear a mask at all times and maintain social distance (6').
- Come to class prepared and on time. If the class is held online, you must keep your camera on to receive credit for attendance, unless you have discussed it with me in advance.
- Accept responsibility for your success in this class. This includes making use of the many support systems, including the Writing Center. Success and failure are both decisions
- Adhere to the Academic Integrity Policy. Academic honesty is the root of academic success, and violations will be punished to the full extent of university policy, up to expulsion from the university.
- Do not participate in disruptive behavior in class, including talking, text messaging and ringing cell phones, and arriving late to class. (Repeat offenders will be asked to leave the classroom).
- Review University- wide policies including classroom behavior, academic integrity, attendance, laptop use, and student accommodation, posted on Student Information Guide (available <https://www.rowan.edu/infoguide/> [\(https://www.rowan.edu/infoguide/\)](https://www.rowan.edu/infoguide/))

Contacting the Instructor: I am available online for office hours and by email. I will

generally respond within 24 hours, unless it is a weekend or holiday. Please follow professional protocols for e-mail (<https://writingcommons.org/article/e-mail-guidelines-for-students/> [_https://writingcommons.org/article/e-mail-guidelines-for-students/](https://writingcommons.org/article/e-mail-guidelines-for-students/).)

When class is held online: Get to class on time and mute your microphone. Keep your camera on the entire time and please remember that you are visible by the entire class. Be respectful to one another at all times: address one another by name; raise your hand to speak; allow others to finish their thoughts; try not to make weird faces when others are speaking; do not eat on camera; dress appropriately. **If there is a technical difficulty connecting within Canvas, please monitor your email account and I will send a solution. Generally, if class has not begun 15 minutes after the start time, we will join in my personal chat room on Webex, but check your email!**

Attendance: Come to every class. If you are not here, you cannot learn effectively. There are no make-ups without a valid excuse for missing class (documented illness, death in the family) and you will earn a zero. Do NOT make routine appointments for class time. If you have a conflict (excused or unexcused), notify me a week in advance. Come to class prepared and on time. If the class is held online, you must keep your camera on to receive credit for attendance, unless you have discussed it with me in advance.

Email and Canvas: You are responsible for checking both platforms regularly. When emailing, please construct a formal email with a greeting and subject line. Only use your Rowan email account for communication.

Assignments: Turn assignments in on time, and using proper grammar and spelling. Many students find it easier to type into MS Word and run spell check before uploading assignments. Also include your name in the title of the file and again in the body of the document itself.

Success: Talk to me! I'm really very nice, and quite helpful! I hold office hours for drop-in discussions, and am available by appointment at other times. I can also respond via email, but please realize a response may take 24 hours or more (I try to untether from the internet after work!) I will do everything I can to help you succeed in this class but please do not wait until the 11th hour to email questions, or to begin the reading.

Writing Center: Please take full advantage of the writing center. It is an important resource!
<http://www.rowanwritingcenter.com>

Electronic Device Policy: Use your laptop solely for class purposes during class time. Cell phones or other mobile devices must be turned off or to “silence all” (not vibrate) for the duration of the class. If you have a special need that requires your phone to be on at all times, please see me in advance of class. Disruptive behavior includes use of cell phones/ texting during class (including online disruptions) and will count against participation. Repeat offenders will be asked to leave the classroom.

Rowan Success Network: The Rowan Success Network powered by Starfish® is designed to make it easier for you to connect with the resources you need to be successful at Rowan. Throughout the term, you may receive email from the Rowan Success Network team (Starfish®) regarding your academic performance. Please pay attention to these emails and consider taking the recommended actions. Utilize the scheduling tools available through RSN to make appointments (tutoring, advising, etc.) at your convenience. Appointments for my office hours can be made through RSN(www.rowan.edu/rsn).

Your academic success is important. If you have a documented disability that may have an impact upon your work in this class, please contact me. Students must provide documentation of their disability to the Academic Success Center in order to receive official University services and accommodations. The Academic Success Center can be reached at 856-256-4234. The Center is located on the 3rd floor of Savitz Hall. The staff is available to answer questions regarding accommodations or assist you in your pursuit of accommodations. We look forward to working with you to meet your learning goals.

University-wide Policies: Students are expected to be aware of and follow university-wide policies, including the Classroom Behavior Policy, Academic Integrity Policy, Student Accommodation Policy, and University Attendance Policy. For more information, please refer to the Student Information Guide (<https://www.rowan.edu/infoguide/>) (<https://www.rowan.edu/infoguide/>).

Rowan University's Statement on Diversity: Rowan University promotes a diverse community that begins with students, faculty, staff and administration who respect each other and value each other's dignity. By identifying and removing barriers and fostering individual potential, Rowan will cultivate a community where all members can learn and grow. The Rowan University community is committed to a safe environment that encourages

grow. The Rowan University community is committed to a safe environment that encourages intellectual, academic, and social interaction and engagement across multiple intersections of identities. At Rowan University, creating and maintaining a caring community that embraces diversity in its broadest sense is among the highest priorities.

Rowan University Sexual Misconduct and Harassment Reporting, and Title IX: Rowan University and its faculty and staff are committed to assuring a safe and productive educational environment for all students. Title IX makes it clear that sexual misconduct and harassment based on sex and gender is a Civil Rights offense subject to the same kinds of accountability and the same kinds of support applied to offenses against protected categories such as race, national origin, etc.

University faculty and staff members are required to report any instances of sexual misconduct or harassment, to the University's Title IX Coordinator so that the appropriate resources and support options are provided. Please report any incidents of sexual misconduct and harassment by clicking [HERE](#). What this means is that as your professor, I am required to report any incidents of sexual misconduct and harassment that are directly reported to me, or of which I am somehow made aware. See Rowan's policy, Student Sexual Misconduct and Harassment.

Rowan University Discrimination and Harassment Reporting, and Title VI: Rowan University prohibits discrimination, whether verbal, written, physical or psychological under the University's Policy Prohibiting Discrimination in the Workplace and Educational Environment. Please report any incidents of discrimination and harassment. In addition, as your professor, I am required to report any incidents of discrimination and harassment that are directly reported to me, or of which I am somehow made aware. Please see below available resources:

Confidential Resources:

The Wellness Center, Winans Hall, 856-256-4333, www.rowan.edu/wellness
(<http://www.rowan.edu/wellness>)

Non-Confidential Resources:

Office of Student Equity and Compliance (OSEC), Savitz Hall 203, 856-256-5830

Public Safety, Bole Annex, 856-256-4911

To learn more about Title IX go to: www.go.rowan.edu/titleix
(<http://www.go.rowan.edu/titleix>)

To learn more about Title VI go to: www.go.rowan.edu/titlevi
(<http://www.go.rowan.edu/titlevi>)



- Grading -

Grades will be determined by your performance on assignments, a final exam, presentations, and participation. Late assignments will automatically lose 15%. No assignment will be accepted more than one day late. Spelling, punctuation, and grammar will form a part of your grade.

Rubric for Grading

Grade	Letter Grade	
90 -100	A- to A+	Superior mastery of facts and principles; clear evidence that stated course objectives and requirements were met. Excellent spelling, punctuation and grammar.
80-89	B- to B+	Above average mastery of facts and principles; evidence that stated course objectives and requirements were met. Appropriate spelling, punctuation and grammar.
70-79	C- to C+	Average mastery of facts and principles; some evidence that requirements were met. Some spelling, punctuation and grammar mistakes.
60-69	D- to D+	Little mastery of facts and principles; acceptable evidence that stated course objectives and requirements were met. Abundant spelling, punctuation and grammar mistakes.
<60	F	No mastery of facts and principles; little evidence that stated course objectives and requirements were met. Inappropriate spelling, punctuation and grammar.

Assessment	Points
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Exams	
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Module 1: Food System Exam	15
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Module 2: Agrochemical Exam	15
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Module 3: Environmental Impact Exam	15
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Final Exam	15
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Research project paper and presentation	
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Part 1: Submit region factsheet	4
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Part 2: Crop suitability analysis	4
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Part 3: Regional Analysis Paper	8
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Part 4: Oral Presentation of Regional Analysis	4
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Participation and Attendance	20
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Total	100
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