



PLS 195B The Science Underpinning GMOs and Organics
Fall 2017
4:00 Th, Social Sciences 118

INSTRUCTOR:

Kenneth A. Feldmann

Office: 822C Marley

E-mail: feldmann@email.arizona.edu

Phone: 502-621-7158

Office Hours: M 2:15-3:30 pm and Th 11:12 or by appointment. I have an open door policy but you can arrange a specific time to meet. I will respond to any emails as soon as possible.

COURSE DESCRIPTION:

Every year more Genetically Modified Organisms (GMOs) are approved for human consumption. This course is designed to help you develop a deeper understanding of conventionally- and organically-grown foods and how GMOs fit in. There is a common misperception that nearly every fruit and vegetable is a GMO. There is also the perception that organics are grown without the use of pesticides and that they are always safe. I will discuss how GMOs, organic- and conventionally-grown foods are grown, what has been done to show that they are safe and what the future looks like for GMOs and organic foods. We will explore who benefits from the increased use of GMOs and organics.

The course format will include lectures by the instructor with considerable time for discussion. Topics will include how GMOs are made, how they are determined to be safe, how organics are grown and how organic growers deal with pests. Student will debate the topics of organically- and conventionally-grown foods and GMOs as the course progresses. There will be two textbooks for the course as handouts of assigned readings. I will also make suggestions for books that will enhance our discussion. Half of your grade will be based on attendance and participation. The other half based on quizzes, assignments and a final exam.

LEARNING OUTCOMES

Upon completing this course, students should be able to:

1. Be able to critically evaluate and thoroughly discuss with others the benefits and limitations of organically-grown foods.
2. Be able to critically contrast organically grown foods with conventionally-grown foods.
3. Be able to describe how GMOs are made and to critically evaluate and thoroughly discuss with others the benefits and limitations of GMOs.

DATES	TOPIC	Readings
24 Aug	Feeding 10 billion people?	Avery chp 1
31 Aug	How are conventionally-grown foods produced?	Avery chps 2-3
7 Sept	What is an organically-grown food and is it safer?	Avery chps 4-5
14 Sept	History of Organic Agriculture	Avery chps 6
21 Sept	How to Grow an Organic Crop	Avery chps 8-9

28 Sept	Certification and Testing of Organics	Avery chps 10-11
5 Oct	Conventional vs Organic Debate	Avery chps 12-13
12 Oct	What is a GMO and how are they made?	Federoff chps 1-3
19 Oct	Herbicide and Insect resistant GMO crops	Federoff chps 4-5
26 Oct	Golden Rice and Other Traits	Federoff chps 6-7
2 Nov	GMO Animals	Federoff chps 8-9
9 Nov	Regulation of GMOs	Federoff chps 10-11
16 Nov	Future of GMOs	Federoff chps 12-13
24 Nov	No Class: Thanksgiving	
30 Nov	GMO vs Organic Debate	Federoff chps 14-15 "The Golden Rice Tale"
14 Dec	6-8 pm Final Exam* – let's discuss	

The Truth About Organic Foods, Alex Avery, 2006

Mendel in the Kitchen by N. Federoff and N.M. Brown, 2004

* See registrar.arizona.edu/schedules/finals.htm

Information on how to use D2L

1. Go to <http://d2l.arizona.edu/> to access D2L
2. Enter your netID login and password
3. Go to "My Academic Courses" If your course does not appear:
 - a. Click on the down arrow beside the current semester.
 - b. Click on the down arrow beside the department name, and then
 - c. Click on your course name.
 - d. You should now be at your D2L Course Home Page.

Links to the Directions for all assignments are under the content heading in the course site found in the lower tool bar.

If you have difficulty with D2L, please read the D2L Tip Sheet at

<http://eebweb.arizona.edu/faculty/dornhaus/courses/d2l%20tip%20sheet%20students.pdf>.

Problems using D2L can also be reported using this Web link <http://help.d2l.arizona.edu/node/153> .

Additionally you can contact UITS 24/7 at: <http://uits.arizona.edu/departments/the247> or directly at - (520) 626-TECH (8324)

TEXTS

For reference, I will use two books more than others. I don't think either of these is written fairly but there are a number which are much more biased; we will look at these as well. Neither needs to be purchased. I will hand out the material that I want to read before class.

TT - Tomorrow's Table, Pamela Ronald and Raoul Adamchak, 2008

OF - The Truth About Organic Foods, Alex Avery, 2006

ASSIGNMENTS:

Assignments will include reading two books and any papers that are made available.

EVALUATION:

Your course grade will be based on quizzes, assignments, attendance, participation and a final exam.

Assignment	Value
Attendance 13 lectures @ 5 pts ea	65 pts
Participation	65 pts
Quizzes (3@7 pts ea)	21 pts
Assignments (3 @ 10 pts ea)	30 pts
Final exam	59 pts
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Total	240

DETERMINATION OF CLASS GRADES:

Score	Grade
90-100% (216-240)	A
80-89% (192-215.9)	B
70-79% (168-191.9)	C
60-69% (144-167.9)	D
Below 144	E

GRADE DEFINITIONS

A: Achievement that is outstanding relative to the level necessary to meet course requirements.

B: Achievement that is significantly above the level necessary to meet course requirements.

C: Achievement that meets the course requirements in every respect.

D: Achievement that is worthy of credit even though it fails to fully meet the course requirements.

E: Represents failure (no credit) and signifies that the work was not worthy of credit or was not completed.

POLICIES:

Extra Credit Policy:

There is no Extra Credit Scheduled for this course, but some opportunities may arise.

Attendance and Classroom Behavior Policies:

Attendance will be taken in this course and is necessary. Absences for any sincerely held religious belief, observance, or practice will be accommodated where reasonable: policy.arizona.edu/human-resources/religious-accommodation-policy. Absences pre-approved by the UA Dean of Students (or dean's designee) will be honored. Missing more than one class period will mean that you lose 5 pts for attendance and 5 pts for participation each time that you miss.

You should shut off your phone before you come to class and avoid reaching for it during lectures. You should refrain from making excessive noise during the lecture so as not to disturb other students in the classroom. **On the rare occasion when you need to arrive to lecture late or leave early, sit neat the door that you enter.**

Online Student Interaction Guidelines:

- 1) The Arizona Board of Regents' Student Code of Conduct <http://deanofstudents.arizona.edu/student-code-conduct-student-faqs>, ABOR policy 5-308, prohibits threats of physical harm to any member of the University community, including one's self. See: <http://policy.arizona.edu/threatening-behavior-students> .
- 2) It is expected that students may disagree with the research presented or the opinions of their fellow classmates. To disagree is fine but to disparage others views is unacceptable. All comments should be kept civil and thoughtful.
- 3) **This Class runs under university policies regarding disruptive behavior.** <http://policy.arizona.edu/disruptive-behavior-instructional> .

Missed Classes or Exams Policy:

Students will be allowed to make-up a quiz only on rare occasions for justifiable, extenuating circumstances. Students need to submit a written request attaching supporting documentation (e.g., note from the Dean of Students or a doctor's verification).

Incomplete Grade Policy:

Incomplete grades will be given only in special circumstances as outlined in university policy as stated in "The University of Arizona Record General Academic Manual"

Academic Integrity:

Students are encouraged to share intellectual views and discuss freely the principles and application of course materials. However, all graded work/exercises must be the product of independent effort unless otherwise instructed. **Students are expected to adhere to the UA code of Academic Integrity as described in the UA General Catalog. See:**

<http://deanofstudents.arizona.edu/codeofacademicintegrity>

Prohibited Conduct:

Students enrolled in academic credit bearing courses are subject to this Code. Conduct prohibited by this Code consists of all forms of academic dishonesty, including, but not limited to:

- 1. Cheating, fabrication, facilitating academic dishonesty, and plagiarism as set out and defined in the Student Code of Conduct, ABOR Policy 5-308-E.10, and F.1*
- 2. Submitting an item of academic work that has previously been submitted or simultaneously submitted without fair citation of the original work or authorization by the faculty member supervising the work.*
- 3. Violating required disciplinary and professional ethics rules contained or referenced in the student handbooks (hardcopy or online) of undergraduate or graduate programs, or professional colleges.*
- 4. Violating discipline specific health, safety or ethical requirements to gain any unfair advantage in lab(s) or clinical assignments.*
- 5. Failing to observe rules of academic integrity established by a faculty member for a particular course.*
- 6. Attempting to commit an act prohibited by this Code. Any attempt to commit an act prohibited by these rules shall be subject to sanctions to the same extent as completed acts.*
- 7. Assisting or attempting to assist another to violate this Code.*

Statement of Copyrighted materials:

Students are advised that all lecture notes, lectures, study guides and other course materials disseminated by the instructor to the students, whether in class or online, are original materials and as such reflect intellectual property of the instructor or author of those works. All readings, study guides, lecture notes and handouts are intended for individual use by the student. Students may not distribute or reproduce these materials for commercial purposes without the express written consent of the instructor. Students who sell or distribute these materials for any use other than their own are in violation of the University's Intellectual Property Policy (available at <http://techlaunch.arizona.edu/university-arizona-intellectual-property-policy>). Violations of the instructors' copyright may result in course sanctions and violate the Code of Academic Integrity.

Policy on Threatening Behavior:

The University seeks to promote a safe environment where students and employees may participate in the educational process without compromising their health, safety or welfare. The Arizona Board of Regents' Student Code of Conduct, ABOR Policy 5-308, prohibits threats of physical harm to any member of the University community, including to one's self. Threatening behavior can harm and disrupt the University, its community and its families. Please see the following document for more information: policy.arizona.edu/education-and-student-affairs/threatening-behavior-students.

Confidentiality of Student Records:

<http://www.registrar.arizona.edu/ferpa/default.htm>. Students should have read and be aware of federal regulations regarding the privacy of their academic records.

Special Needs Policy:

It is the University's goal that learning experiences be as accessible as possible. If you anticipate or experience physical or academic barriers based on disability or pregnancy, please let me know immediately so that we can discuss options. Students needing special accommodations or special services should contact the Disability Resources Center, 1224 East Lowell Street, Tucson AZ 85721, (520)621-3268, FAX (520)621-9423, email: uadrc@email.arizona.edu , <http://drc.arizona.edu/>. Resources/CDRR (621-5227). You must register and request that the center or DRC send the instructor official notification of your needs as soon as possible. Please plan to meet with via phone or office hours to discuss accommodations and how this course's requirements may impact your ability to fully participate. **The need for accommodations must be documented by the appropriate office.**

Nondiscrimination and Anti-harassment

State the University Policy 200E on prohibited behaviors: <http://policy.arizona.edu/human-resources/nondiscrimination-and-anti-harassment-policy>

Course Withdrawal

Students withdrawing from this course must notify me prior to nonattendance in of online activities and must execute drop or withdrawal procedures in accordance with the UA General Catalog (see <http://catalog.arizona.edu/> for official dates).

Notification of Objectionable Materials

As part of this course, we will be covering topics that may be uncomfortable for students. These topics include the modification and use of animals for human benefit and the use of organic vs conventionally grown foods.

Subject to Change Statement

Information contained in the course syllabus, other than the grade policies, may be subject to change with reasonable advance notice, as deemed appropriate by the instructor.