

IDS 2935: Critical Evaluation of Modern Food, Farm and Medical Technology

Quest 2

I. General Information

Class Meetings

- Summer B 2023
- M,W Whole class meeting, 12:30-1:45 pm, CSE101A
- Tu-Th Breakout Sections, Period 4 Keene-Flint Hall 119, 101, 117
Period 5 Keene-Flint Hall 115, 113, 121
- F Recorded Lecture/interview/activity/ Quiz – online

Instructor

Dr. Kevin Folta
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Teaching Assistants

Alexis Bolger
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Course Description

New technologies in crops and medicine are emerging constantly. However, a powerful movement stands to arrest the application of new technologies before they can address the problems they were created to solve. Other interests profit from manufacturing risk around a scientific consensus supported by siloed factions within traditional and social media that fortify perceptions. This Quest 2 course considers cases of new technology and its implementation, and the movements that were created in response. Students will examine the psychology of information flow, our cognitive mistakes, logical fallacy, elements of argument and how the problems in communicating the science are hampered by the tribal echo chambers of social media. We will then apply these concepts in exploring case studies, from resistance to refrigeration to modern application of molecular medicine to COVID19, to changes in

human genetics. The course will outline the scientific method, scholarly publication, and one-off publications that impacted food security and public health. Students will engage debate around several topics and learn communication strategies used in effective (and non-effective) argument. The main question asked is, "Just because we could, does it mean that we should?" as new technologies will be covered in detail, along with their risks and benefits—as well as how to communicate them. The course will allow students to connect with some of the authors of the relevant readings through visits via Zoom.

Quest and General Education Credit

- Quest 2
- Biological Sciences
- Writing Requirement (WR) 2000 words

This course accomplishes the [Quest](#) and [General Education](#) objectives of the subject areas listed above. A minimum grade of C is required for Quest and General Education credit. Courses intended to satisfy Quest and General Education requirements cannot be taken S-U.

Required Readings and Works

All readings and works are available in Canvas.

Required manual: Strunk and White, *The Elements of Style*

Materials and Supplies Fees: n/a

Commented [W1]: Because your course will satisfy the Writing Requirement, you need to list a recommended writing manual.

II. Graded Work

Description of Graded Work

(500 points total)

Weekly Quiz on Friday, covering concepts taught, online format (50 points, x 5= 250 points). No quiz week 1.

Written Assignment: Essay on surprising resistance to a new technology (500-800 words) (50 points)

Written Assignment: Your views on germ line gene editing in humans. (250 words max) (50 points)

Written Assignment: (Counts toward Writing Requirement, 1000 words) Did I change my mind and why? The writing assignment will be the conclusion of the course that will compare attitudes coming into the course against the feelings upon exit. What opinions on new technology changed? What created the change? How did the communications strategies described work to inform your change, if at all? (100 points)

Commented [W2]: I'm confused. Do you have 3 or 4 writing assignment. If this is your fourth writing assignment, why do you not indicate how many points it's worth? Also, is this the only writing assignment that counts towards the Writing Requirement? If so, you are 1,000 words short

Participation: Attendance is mandatory. Students will be expected to be prepared for class to discuss relevant readings and in-class materials, and participate in group activities and debates. (50 points)

Grading Scale

For information on how UF assigns grade points, visit: <https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/>

A	94 – 100%		C	74 – 76%
A-	90 – 93%		C-	70 – 73%
B+	87 – 89%		D+	67 – 69%
B	84 – 86%		D	64 – 66%
B-	80 – 83%		D-	60 – 63%
C+	77 – 79%		E	<60

Grading Rubric(s)

Writing Assessment Rubric and Statements

	SATISFACTORY (Y)	UNSATISFACTORY (N)
CONTENT	Papers exhibit at least some evidence of ideas that respond to the topic with complexity, critically evaluating and synthesizing sources, and provide at least an adequate discussion with basic understanding of sources.	Papers either include a central idea(s) that is unclear or off-topic or provide only minimal or inadequate discussion of ideas. Papers may also lack sufficient or appropriate sources.
ORGANIZATION AND COHERENCE	Documents and paragraphs exhibit at least some identifiable structure for topics, including a clear thesis statement but may require readers to work to follow progression of ideas.	Documents and paragraphs lack clearly identifiable organization, may lack any coherent sense of logic in associating and organizing ideas, and may also lack transitions and coherence to guide the reader.
ARGUMENT AND SUPPORT	Documents use persuasive and confident presentation of ideas, strongly supported with evidence. At the weak end of the Satisfactory range, documents may provide only generalized discussion of ideas or may provide adequate discussion but rely on weak support for arguments.	Documents make only weak generalizations, providing little or no support, as in summaries or narratives that fail to provide critical analysis.
STYLE	Documents use a writing style with word choice appropriate to the context, genre, and discipline. Sentences should display complexity and logical sentence structure. At a minimum, documents will display a less precise use of vocabulary and an uneven use of sentence structure or a writing style that occasionally veers away from word choice or tone appropriate to the context, genre, and discipline.	Documents rely on word usage that is inappropriate for the context, genre, or discipline. Sentences may be overly long or short with awkward construction. Documents may also use words incorrectly.

MECHANICS	Papers will feature correct or error-free presentation of ideas. At the weak end of the Satisfactory range, papers may contain some spelling, punctuation, or grammatical errors that remain unobtrusive so they do not muddy the paper's argument or points.	Papers contain so many mechanical or grammatical errors that they impede the reader's understanding or severely undermine the writer's credibility.
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- The Writing Requirement (WR) ensures students both maintain their fluency in writing and use writing as a tool to facilitate learning.
- The instructor will evaluate and provide feedback before the end of the course on all of the student's written assignments with respect to grammar, punctuation, clarity, coherence, and organization.
- WR course grades have two components. To receive writing requirement credit, a student must receive a grade of C or higher and a satisfactory completion of the writing component of the course.

Participation Rubric

Commented [W3]: Are you grading participation? If so, it should be listed in your graded work section. If not, then delete this rubric.→

	High Quality	Average	Needs Improvement
Present	Complete attendance, engaged in discussion.	Missed classes, limited interaction with class	Multiple missed classes, not participating.
Informed: Shows evidence of having done the assigned work.	Can discuss details of assignments when called upon	Some knowledge of readings/work assigned	Does not come prepared for discussions
Thoughtful: Shows evidence of having understood and considered issues raised.	Enjoys debate with sensitivity to other positions, intellectually honest	Engages in conversations in class and is clear on issues	Fails to engage discussion

III. Annotated Weekly Schedule

			Week 1
1	M	7/3/23	Why we are here. Information literacy. Misinformation, disinformation and why it matters. Activity: Take Entry Survey
	Tu	7/4/23	Independence Day Holiday, no class
2	W	7/5/23	Discuss Entry Survey, How do we validate information? Guest Speaker: Melanie Trecek-King, Professor at Massaquoi College

			READING: A Life Preserver For Staying Afloat in a Sea of Misinformation
3	Th	7/6/23	Exercise in lateral reading—compare pediatrician organizations and discuss the results Using the SMELL test on internet information sources.
4	F	7/7/23	Does confronting misinformation matter? Guest speaker, Dr. Timothy Caulfield Reading: Does Debunking Work? Caulfield pp183-200
			Week 2
5	M	7/10/23	Information sources: What is peer review? Predatory publishing? What happens when bad information is vertically amplified?
6	Tu	7/11/23	Logical fallacies
7	W	7/12/23	The Mistakes We Make – Critical thinking, bias and self deception, logical fallacy continued,
8	Th	7/13/23	Misleading statistics and fact checking
9	F	7/14/23	What information do we trust? What is peer review? Predatory publishing? What happens when bad information is vertically amplified?
			Week 3
10	M	7/17/23	(ONLINE ONLY : NO IN-CLASS MEETING) The basis of biotechnology (DNA, central dogma, gene expression, genetic engineering, gene editing)
11	Tu	7/18/23	Create a conspiracy using ChatGTP; conspiracy generation and defense
12	W	7/19/23	Biotechnology applied to medicine, and associated disinformation
13	Th	7/20/23	What are the criticisms of gene editing in humans? Should we do it? In class debate

14	F	7/21/23	Biotech cancer therapies, bogus cancer cures. Guest: Dr. Skyler Johnson, Radiation Oncologist, University of Utah
			Week 4
15	M	7/24/23	Biotechnology applied to agriculture (animals/plants)
16	Tu	7/25/23	Twitter Exercise: What are the tactics used to break trust in crop biotechnology? Part 2. Examples of biotechnology in agriculture. In class debate, should we do it?
17	W	7/26/23	Critical evaluation of alternative medicine, does it work? Guest Speaker, Dr. Britt Hermes
18	Th	7/27/23	Create ads for pseudoscientific products using their techniques
19	F	7/28/23	Critical analysis of published papers that “support” alternative medicine- what do the data really say?
			Week 5
20	M	7/31/23/	Chemophobia and the Dirty Dozen – How is the perception of risk exploited to manipulate public opinion? What does critical analysis of the literature show us?
21	Tu	8/1/23	Does Diet Coke Cause Cancer? A look at the recent IARC classification and its social media fallout.
22	W	8/2/23	Vaccines and disinformation – We’ll discuss the history of vaccination along with demonstration of safety and efficacy, along with discussion of new vaccination strategies. Guest: Dr. Jonathan Howard, Chief of Neurology, Bellview Hospital, Assoc. Prof. NYU Take Exit Survey
23	Th	8/3/23	Discuss differences in entry and exit surveys, and what changed
24	F	8/4/23	
			Week 6
25	M	8/7/23	How to change minds. Guest Speaker: Tamar Haspel, Washington Post food columnist Reflection paper due.

26	Tu	8/8/23	Break out group discussions on how information presented changed their views or perhaps reinforced them.
27	W	8/9/23	Effective scientific communication
28	Th	8/10//23	Active listening, and active listening drills
29	F	8/11/23	Your role in public engagement, building your personal brand.

IV. Student Learning Outcomes (SLOs)

At the end of this course, students will be expected to have achieved the [Quest](#) and [General Education](#) learning outcomes as follows:

- Content:** *Students demonstrate competence in the terminology, concepts, theories and methodologies used within the discipline(s).* (Quest 2, Biological Sciences). The content will cover areas of biological science currently under ethical debate or issues of public concern in food, farming and medicine. Content will be presented that will be analyzed by students to identify the flaws and/or misrepresentation. The effects of scientific misrepresentation will be discussed. Weeks 6-14 will include extensive discussion of processes of biotechnology relevant to modern medicine and agriculture.
- Critical Thinking:** *Students carefully and logically analyze information from multiple perspectives and develop reasoned solutions to problems within the discipline(s).* Students will be exposed to cognitive errors and breakdowns in logic, along with how data and statistics are willingly misrepresented or manipulated to shape perception. Guidelines for identifying credible information will be presented, as well as the influence of news media, social media and predatory publishing. This section satisfies the requirement for Critical Thinking in Quest courses and will apply to weeks 2-5 and associated assignments.
- Communication:** *Students communicate knowledge, ideas and reasoning clearly and effectively in written and oral forms appropriate to the discipline(s).* Students will learn elements of persuasive rhetoric, public engagement, and scientific advocacy. The 'deficit model' will be discussed. There will be training of engagement in different media formats, along with associated caveats. Students will learn the elements of trust building, empathy and listening skills that are required for effective science communication. Students will be graded on in-class drills and written assignments, which include analysis of published scientific literature. This section will satisfy the Communication section of the Quest course and content will be presented in weeks 1, 15 and 16, and relevant assignments.
- Connection:** *Students connect course content with meaningful critical reflection on their intellectual, personal, and professional development at UF and beyond.* Students will state positions on key areas of discussion at the beginning and end of the class, along with the

evidence that best supports their positions. They will be assessed for potential biases using a questionnaire that identifies common populations segments based on political leanings, non-scientific beliefs, and media consumption. This section will combine areas of the course to reflect on the personal journey from beginning to end of this course material. It will be assessed as a final paper that considers attitudes coming in, attitudes upon exit, how change happened, what possibly prevented change, and how the student will communicate or perhaps advocate for change as an expert in these areas.

V. Quest Learning Experiences

1. Details of Experiential Learning Component

The experiential learning component will be in-class debates and drills in active listening and response. Students will also participate in improvisational comedy training that teaches focus on tactical listening.

2. Details of Self-Reflection Component

Students will complete a questionnaire at the start of the course that will gauge their opinions on several issues in food, farming and medicine. That foundation will be later assessed after exposure to the current information on the topic, inquiring how their mind was changed or if the information presented fortified a previously held position. The question, "What would change your mind?" will be presented. Finally, the critical data that shaped their belief will be discussed.

VI. Required Policies

Attendance Policy

In a short summer session attendance is mandatory. Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at: <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>

Twitter Account

We will analyze example of online communication around contentious topics and the communications strategies used to push false/misleading information, as well as accurate scientific information. Students should sign up for an account with the intention of using it for long-term professional interaction and brand building.

In-Class Use of Electronics

While temporarily referring to laptops and handheld devices is expected during class, the use of electronic devices for purposes beyond the scope of the discussion is forbidden during class time.

Students Requiring Accommodation

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the disability Resource Center by visiting <https://disability.ufl.edu/students/get-started/>. It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester.

UF Evaluations Process

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluer.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.

University Honesty Policy

UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Honor Code (<https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

Counseling and Wellness Center

Contact information for the Counseling and Wellness Center: <http://www.counseling.ufl.edu/>, 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.

The Writing Studio

The writing studio is committed to helping University of Florida students meet their academic and professional goals by becoming better writers. Visit the writing studio online at <http://writing.ufl.edu/writing-studio/> or in 2215 Turlington Hall for one-on-one consultations and workshops.

In-Class Recordings

Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for personal educational use, (2) in connection with a complaint to the university, or (3) as evidence in, or in

preparation for, a criminal or civil proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor.

A “class lecture” is an educational presentation intended to inform or teach enrolled students about a particular subject, including any instructor-led discussions that form part of the presentation, and delivered by any instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course. A class lecture does not include lab sessions, student presentations, clinical presentations such as patient history, academic exercises involving solely student participation, assessments (quizzes, tests, exams), field trips, private conversations between students in the class or between a student and the faculty or lecturer during a class session.

Publication without permission of the instructor is prohibited. To “publish” means to share, transmit, circulate, distribute, or provide access to a recording, regardless of format or medium, to another person (or persons), including but not limited to another student within the same class section. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third party note/tutoring services. A student who publishes a recording without written consent may be subject to a civil cause of action instituted by a person injured by the publication and/or discipline under UF Regulation 4.040 Student Honor Code and Student Conduct Code.