ALS 4932 – Challenge 2050: Tools (3 credits)
Spring 2014 Syllabus

Instructors:
Jennifer Clark – FRE email: tspartin@ufl.edu
Wendell Porter – ABE e-mail: waporter@ufl.edu
Monika Oli – MCB e-mail: moli@ufl.edu

Hybrid class; we will meet both asynchronously online and face-to-face in-class Wednesdays
Classroom: FAC 0120  Meeting time: Periods 3-4 (9:35 am – 11:30 am EST)

Course Description
Experiential-learning techniques will be used to advance the critical-thinking and problem-solving skills
of students in their efforts to determine how to best feed a world population of 9 billion people by the
year 2050. Team-building exercises are designed to constructively analyze components of complex
real-world solutions. Self-discovery exercises and mentored in-class discourse will be used to navigate
through questions such as: What tools are available? What skills are needed (e.g., write a business
plan?, learn research methods?, understand policy analysis?, work with spreadsheets?, gain
interpersonal or leadership skills?, think more creatively?).

The experience will culminate in a group proposal developed and ready for submission to a stakeholder
audience and may be in the form of a competition, grant proposal, white paper, or funding opportunity.
“Challenge Courses” are designed exclusively to address scientific, business, economic, environmental,
health and social issues related to food and agriculture.

What is the goal of this class?
The goal of this class is to gain appropriate interdisciplinary awareness and team problem-solving skills that will contribute
to an overall, sustainable long-term strategy to feed a world population by the year 2050. You are expected to add your
contribution to a meta-data collection project by the end of the semester. Your contribution can be as broadly or
narrowly defined as you wish but at its essence should derive from your own specific skill set and skills acquired in this class
within a team environment.

To be part of this challenge, you are required to develop an original and sustainable idea into a cohesive,
realistic and feasible strategy that can be communicated to others and added to the collective
resources contributing to Grand Challenge solutions. What are you going to do during the semester to
meet the Challenge?
What are the course objectives?

The “Challenge 2050: Tools” course objective is to provide a platform for you to 1) broaden your perspective regarding the multi-collaborative processes of team problem solving 2) increase your awareness of limited resource use including the use of time and physical resources, 3) create an original solution to the challenge by utilizing a team approach towards problem solving to meet specific project milestones 4) present project findings to an audience of professionals, and 4) further develop an appreciation of the communication skills associated with both hard science and social science perspectives necessary for multi-disciplinary collaboration.

To meet our course objectives, the facilitators of this course will provide you with direction and resources designed to focus your attention on trans-disciplinary, collaborative, and innovative approaches to solve real world problems. The Challenge 2050: Tools is intended to expose you to real-world skills in the development of your project, which will enable you to innovatively meet the societal challenges through interdisciplinary partnerships. The critical thinking process in which we will engage is designed to create project deliverables facilitating real-world solutions within the diverse agricultural industry and its impact on food, energy, and health systems throughout the world.

The course is delivered via a set of online modules, team-based interactions, and face-to-face meetings designed to broadly analyze the complex issues of our real-world situation. The instructional content of the course is designed to lead you through both the self-discovery process as well as team-based dynamics for identifying, designing, and communicating your Challenge 2050 contribution.

While the entire Challenge 2050 is a complex issue, smaller and potentially more manageable components of the issue include: necessary inputs and resources, production abilities and constraints, disease and environmental challenges, harvesting, transportation, storage, and distribution of food stocks needed by society. Questions that we face include, but are not limited to, “how do we provide the available energy sources needed to meet the Challenge?” “How do we educate a world population in areas of very scarce resources in which economic disequilibrium prevents incentives for investment and perpetuates destabilized food access?” Additional factors and consequences that affect our solution efforts include health systems and food safety.

What is the benefit of taking this class?

The primary benefit for students taking this course is the enhanced capacity and experience for critically thinking through complex problems logically, evaluating viable solutions, and communicating results to stakeholders. You can expect to develop transferable industry skills needed as you define expectations, develop a perspective and timeline, determine measurable outcomes, and execute an original idea as a team process. The skills you will gain in this course are transferrable to all aspects of your personal and professional life.
Evaluation Process:

Your written contributions will be evaluated using a set of objective rubrics designed to evaluate milestones in the development of your part of the solution over the course of the semester. You will be self-evaluated as well as receive subjective feedback from your peers, instructor, and industry stakeholders during a group presentation at the end of the semester.

You will be further evaluated on all the different skills you learn in the online portion of the class. You will be using the skills as part of your project. As one of your assignments you will submit a “skills portfolio” with links, examples, instructions and applications of each tool.

Milestones met throughout the semester will culminate in a professional presentation targeted at a real audience, like investors, a granting agency, a company, policy makers, government or affected people. Deliverables might include grant proposals, policy recommendations, or white papers for NGOs.

Textbook:


Course Schedule:

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
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<tr>
<td>Week 1</td>
<td>Introductions; Defining the Challenge 2050 Problem and Discussing Solutions</td>
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<tr>
<td>Week 2</td>
<td>Personal Skills &amp; Organizational Infrastructure Needs Assessment</td>
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<td>Week 3</td>
<td>Professional Communication, Time Management and Team-Building Strategies</td>
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<td>Week 4</td>
<td>Resource Allocation and Constraints, Basics of Credit Systems and Microfinance</td>
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<td>Week 5</td>
<td>Food Production Inputs, Distribution, and Marketing Considerations</td>
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<td>Week 6</td>
<td>Energy Sources: World and USA</td>
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<td>Week 7</td>
<td>Renewable Energy: World and USA</td>
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<td>Week 8</td>
<td>Energy and Agriculture</td>
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<td>Week 9</td>
<td>Spring Break</td>
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<td>Week 10</td>
<td>Big Data</td>
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<td>Week 11</td>
<td>The Microbial Challenge</td>
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<td>Week 12</td>
<td>Project work</td>
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<td>Week 13</td>
<td>Microbes and Food Production</td>
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<td>Week 14</td>
<td>Presentations</td>
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<td>Week 15</td>
<td>Presentations; Online portfolio skills assessment</td>
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<td>Week 16</td>
<td>Wrap up</td>
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Grades and Grade Points

For information on current UF policies for assigning grade points, see https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx
Course Grading

1. Discussion Boards (general rubric): 10 at 10 points each 100 pts
2. Summary of class topics 10 at 10 points each 100 pts
3. Online reading quizzes 10 at 10 points each 100 pts
4. Deadlines Agriculture Innovation Challenge 2 submissions 50 points each 100 pts
5. Presentation for final project 100 pts
6. Written report 100 pts

Attendance and Make-Up Work
Requirements for class attendance and make-up exams, assignments and other work are consistent with university policies that can be found at:

Online Course Evaluation Process
Student assessment of instruction is an important part of efforts to improve teaching and learning. At the end of the semester, students are expected to provide feedback on the quality of instruction in this course using a standard set of university and college criteria. These evaluations are conducted online at https://evaluations.ufl.edu. Evaluations are typically open for students to complete during the last two or three weeks of the semester; students will be notified of the specific times when they are open. Summary results of these assessments are available to students at https://evaluations.ufl.edu/results.

Academic Honesty
As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge: “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity.” You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit 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."

It is assumed that you will complete all work independently in each course unless the instructor provides explicit permission for you to collaborate on course tasks (e.g. assignments, papers, quizzes, exams). Furthermore, as part of your obligation to uphold the Honor Code, you should report any condition that facilitates academic misconduct to appropriate personnel. It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For more information regarding the Student Honor Code, please see: http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code.
Software Use:
All faculty, staff and students of the university are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against university policies and rules, disciplinary action will be taken as appropriate.

Services for Students with Disabilities
The Disability Resource Center coordinates the needed accommodations of students with disabilities. This includes registering disabilities, recommending academic accommodations within the classroom, accessing special adaptive computer equipment, providing interpretation services and mediating faculty-student disability related issues. Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation

0001 Reid Hall, 352-392-8565, http://www.dso.ufl.edu/drc/

Campus Helping Resources
Students experiencing crises or personal problems that interfere with their general well-being are encouraged to utilize the university’s counseling resources. The Counseling & Wellness Center provides confidential counseling services at no cost for currently enrolled students. Resources are available on campus for students having personal problems or lacking clear career or academic goals, which interfere with their academic performance.

University Counseling & Wellness Center, 3190 Radio Road, 352-392-1575, http://www.counseling.ufl.edu/cwc/

- Counseling Services
- Groups and Workshops
- Outreach and Consultation
- Self-Help Library
- Wellness Coaching

Career Resource Center, First Floor JWRU, 392-1601, http://www.crc.ufl.edu/

Should you have any complaints with your experience in this course please visit http://www.distance.ufl.edu/student-complaints to submit a complaint.

All University of Florida policies will be upheld at all times.