

ALS 6031: Project Team Research: Building Skills in Agrobiography

Fall 2018; 3 Credits

Meeting Times: Tue 3:00-3:50 p.m. (period 7); Thurs 3:00-4:55 (periods 7 & 8)

INSTRUCTORS

Dr. Diane Rowland, Professor, University of Florida, Institute of Food and Agricultural Sciences, Agronomy Department, 3105 McCarty Hall-B, Gainesville, FL 32611; drowland@ufl.edu, 229-869-2952

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PREREQUISITES

None

COURSE DESCRIPTION

Hands-on experience in addressing a real-world problem faced by an agricultural industry partner. Production of a detailed plan, project design, and preliminary data for evaluating and solving the problem. Offered every term.

JUSTIFICATION

This course is designed to address the need for broad training in agricultural fields as food production systems become more complex with interdisciplinary challenges. Hands-on experience solving specific problems faced by industry representatives is also critical for employment preparation and competitive standing. This course will emphasize acquiring/refining skills within the following areas: professionalism; project management; working in interdisciplinary teams; effective communication (written and oral) with peers and mentors; tackling complex projects through creative and novel approaches, and formulating, designing, and presenting methodologies to solve problems.

COURSE OBJECTIVES

Upon the completion of this course, students should be able to:

- Display mastery of experimental approaches and vocabulary terms covered in the course and assigned reading materials
- Create a scope or statement of work, timeline, activity list, and deliverables associated with team project
- Define and evaluate the industry problem, determine potential solutions, and identify appropriate data collections
- Communicate experimental approaches and design to team members and industry partners
- Apply theoretical knowledge attained in this course to other agricultural production situations/systems to properly evaluate and solve problems

CLASS FORMAT

This class meets formally two days per week, with the first meeting spanning 2-periods and the second for 1-period. Each meeting will be held in person and by video for students not on campus. Additional group or sub-group meetings may be added as needed once the project progresses. A one-day meeting at the industry's headquarters in FL may also be scheduled according to the availability of all team members. One 3-hour symposium will be scheduled to allow for presentation of the team's proposed approach, design, and preliminary data to the stakeholders prior to the end of the semester.

ROLE OF INDUSTRY PARTNERS/MENTORS

Industry partners approach the Center for Stress Resilient Agriculture (CSRA) with a real-world problem that their company is facing. Once the partner and the CSRA have clearly outlined the problem statement and the course deliverables, an industry representative is assigned to serve as a mentor for the course. Each industry representative meets with the class 5 to 6 times over the course of the semester, either in person or remotely. The mentors are present to advise the group on the direction of the projects, specific points of interest from their company, feasibility of design/implementation of recommendations, and content of the final paper and presentation.

COURSE SCHEDULE

Week 1 (1/18-1/12)	Course Overview
Week 2 (1/15-1/19)	Smart Goals
Week 3 (1/22-1/26)	Working in Groups
Week 4 (1/29-2/2)	Effective Writing
Week 5 (2/5-2/9)	Scientific Ethics
Week 6 (2/12/2/16)	Project Management
Week 7 (2/19-2/23)	Time Management
Week 8 (2/26-3/2)	Effective Communication
Week 9 (3/5-3/9)	OFF - SPRING BREAK
Week 10 (3/12-3/16)	Conflict Resolution
Week 11 (3/19-3/23)	Humility in Science
Week 12 (3/26-3/30)	Scientific Integrity
Week 13 (4/2-4/6)	Effective Presentations
Week 14 (4/9-4/13)	Professionalism
Week 15 (4/16-4/20)	Leadership Skills
Week 16 (4/23-4/27)	Networking, Reading Days
Week 17 (4/30-5/4)	Finals Week

ASSIGNMENTS: READINGS AND VIDEOS

You are expected to have viewed or read any materials prior to the class meeting time for the week. The first part of the class will involve the discussion of this material. Part of your participation evaluation will involve your active discussion of the materials.

Week 1: Class Introduction

- 1) Review Syllabus
- 2) Fill out personal introduction on Canvas class site

Week 2: Smart goals

- Tom Wujec: Build a tower, build a team, Ted Talks, Feb. 2010, TED2010.
- https://www.ted.com/talks/tom_wujec_build_a_tower
- New Scientist, "The Smart Way to Manage a Large Research Project", <http://www.nextscientist.com/manage-a-large-research-project/>

Week 3: Working in Teams

- Quiet – Chapter 3

Week 4: Writing Effectively

- Scitable, Effective Writing, NatureEducation, English Communication for Scientists, Unit 2.2. <https://www.nature.com/scitable/topicpage/effective-writing-13815989>
- Feliú-Mójer, M. 2015. Effective Communication, Better Science. Scientific American, Guest Blog, February 24. <https://blogs.scientificamerican.com/guest-blog/effective-communication-better-science/>
- Melissa Marshall, Talk nerdy to me, Ted Talk, June 2012, TEDGlobal 2012. https://www.ted.com/talks/melissa_marshall_talk_nerdy_to_me#t-90573

Week 5: Scientific Ethics

- Ben Goldacre, Battling bad science, Ted Talks, July 2011, TEDGlobal 2011 https://www.ted.com/talks/ben_goldacre_battling_bad_science

Week 6: Project Management

- Hunt, A. 2005. Your research project – How to manage it. Routledge Press, ISBN: 0-415-34408-5 https://www.york.ac.uk/media/biology/documents/careers/managing_research_project.pdf
- Portny, S.E. and J. Austin. 2002. Project Management for Scientists. Science. Jul 12, 2002. <http://www.sciencemag.org/careers/2002/07/project-management-scientists>

Week 7: Time Management

- Laura Vanderkam, How to gain control of your free time, Ted Talks, Feb. 7, 2017 https://www.ted.com/talks/laura_vanderkam_how_to_gain_control_of_your_free_time
- Rory Vaden, How to multiply your time, Ted Talks, June 1, 2015 <https://m.youtube.com/watch?v=y2X7c9TUQJ8>

- Boss, J.M. and Eckert, S.H. 2004. Academic scientists at work: where'd my day go? Science, April 9. <http://www.sciencemag.org/careers/2004/04/academic-scientists-work-whered-my-day-go>

Week 8: Communicating Effectively

- Julian Treasure, How to speak so people want to listen, Ted Talks, June 2013, TEDGlobal 2013. https://www.ted.com/talks/julian_treasure_how_to_speak_so_that_people_want_to_listen

Week 9: Conflict Resolution

- Margaret Heffernan, Dare to disagree, Ted Talks, June 2012, TEDGlobal 2012. https://www.ted.com/talks/margaret_heffernan_dare_to_disagree
-
- Snippet from "The Office": <https://www.nbc.com/the-office/video/conflict-resolution/n21591>
- Managing conflict in your lab group <http://www.sciencemag.org/careers/2005/09/mind-matters-managing-conflict-lab>
- An Introduction to Conflict Resolution <https://www.skillsyouneed.com/ips/conflict-resolution.html>

Week 10: Humility in Science

- King, A. 2016. Humility in Science: Because Science Always Wins. In-Training. <http://in-training.org/humility-science-science-always-wins-11239>
- Payne, D. 2017. Lindau: The charge of Nobel lasses (and lads): Be humble. Naturejobs, June 28. <http://blogs.nature.com/naturejobs/2017/06/28/lindau-the-charge-of-the-nobel-lasses-and-lads-be-humble#more-53247>
- Stirling, A. 2010. Keep it complex. Nature 468: 1029-1031. <https://www.nature.com/nature/journal/v468/n7327/pdf/4681029a.pdf>

Week 11: Scientific Integrity

- View DOI video to 14:15 and review the codes of conduct from the PDF document. We will use the scenarios to discuss in class. https://www.doi.gov/ppa/seminar_series/video/whats-all-the-fuss-about-scientific-integrity
- DOI Code of Scientific and Scholarly Conduct <https://www.doi.gov/sites/doi.gov/files/migrated/scientificintegrity/upload/DOI-Code-of-Scientific-and-Scholarly-Conduct-Poster-December-2014.pdf>

Week 12: Giving an Effective Oral Presentation

- Chris Anderson, TED's secret to great public speaking, Ted Talks, March 2016, TED Studio. https://www.ted.com/talks/chris_anderson_teds_secret_to_great_public_speaking#t-336004
- Nancy Duarte, The secret structure of great talks, Ted Talks, November 2011, TEDxEast https://www.ted.com/talks/nancy_duarte_the_secret_structure_of_great_talks#t-855068

Week 13: Professionalism

- Kathryn Schulz, On being wrong, Ted Talks, March 2011, TED2011.
https://www.ted.com/talks/kathryn_schulz_on_being_wrong#t-703757
- Korenman, S.G. Professionalism in Science.
<https://ori.hhs.gov/education/products/ucla/chapter1/page03.htm>
- Historical perspective on Professionalism in Science: Professionalism and Science. 1931. Nature 127:961-963.
<https://www.nature.com/nature/journal/v127/n3217/pdf/127961a0.pdf>
- Dale Atkins, Being a Professional, Tedx Talk, May 4, 2013, TEDxYouth@EHS
<https://www.youtube.com/watch?v=slv7sdGJWPI&app=desktop>

Week 14: Leadership Skills

- Jensen, D.G. 2015. The many faces of leadership. Science, Dec. 16.
<http://www.sciencemag.org/careers/2015/12/many-faces-leadership>
- Drew Dudley, Everyday Leadership, Tedx Talks, September 2010, TEDxToronto
https://www.ted.com/talks/drew_dudley_everyday_leadership

Week 15: Networking

- Pain, E. 2009. Academia or Industry? Finding the Right Fit. Science, May 22.
<http://www.sciencemag.org/careers/2009/05/academia-or-industry-finding-right-fit>

SUGGESTED MILESTONE PLAN

Week (Dates)	Topic	Reading/Discussion Topic	Assignments Due
Week 1 (1/18-1/12)	Course Overview	Syllabus, Problem Portfolio	
Week 2 (1/15-1/19)	Smart Goals	Ted Talk-Wujec; New Scientist	5 bibliography entries (individual)
Week 3 (1/22-1/26)	Working in Groups	Quit Chapter 3	Group Plan of Action (see details); Writing Assignment 1
Week 4 (1/29-2/2)	Effective Writing	Ted Talk-Marshall; Scitable; Mojer 2015	Individual Responsibilities
Week 5 (2/5-2/9)	Scientific Ethics	Ted Talk-Goldacre	Individual Project Designs
Week 6 (2/12/2/16)	Project Management	Hunt 2005; Portney 2002	Writing Assignment 2
Week 7 (2/19-2/23)	Time Management	Ted Talks-Vanderkam/Vaden; Boss 2004	Paper Outline
Week 8 (2/26-3/2)	Effective Communication	Ted Talk-Treasure	Practice Presentations
Week 9 (3/5-3/9)	OFF - SPRING BREAK	OFF	Writing Assignment 3
Week 10 (3/12-3/16)	Conflict Resolution	Ted Talk-Heffernan; The Office; conflict x2	
Week 11 (3/19-3/23)	Humility in Science	King 2016; Payne; 2017; Stirling 2010	Paper Draft
Week 12 (3/26-3/30)	Scientific Integrity	DOI Video; DOI Code of Conduct	Individual PPT Slides; Writing Assignment 4
Week 13 (4/2-4/6)	Effective Presentations	Ted Talks-Anderson/Duarte	Peer Evaluations
Week 14 (4/9-4/13)	Professionalism	Ted Talks-Schulz/Atkins; Korenman, Historical	Practice Group Presentation
Week 15 (4/16-4/20)	Leadership Skills	Ted Talk-Dudley; Jenson 2015	Final Paper; Writing assignment 5
Week 16 (4/23-4/27)	Networking, Reading Days	Pain 2009	Final Presentation
Week 17 (4/30-5/4)	Finals Week		

TEXTBOOK

None Required

ASSIGNED READINGS

Readings and videos will be assigned for each week of the course.

Additional readings from literature will be chosen throughout the semester in support of the project question. These will be based on additional information required for the design or implementation of the project. Assigned weekly readings will be posted in Canvas or emailed each week.

READING LIST

- New Scientist, “The Smart Way to Manage a Large Research Project”, <http://www.nextscientist.com/manage-a-large-research-project/>
- Scitable, Effective Writing, NatureEducation, English Communication for Scientists, Unit 2.2. <https://www.nature.com/scitable/topicpage/effective-writing-13815989>
- Feliú-Mójer, M. 2015. Effective Communication, Better Science. Scientific American, Guest Blog, February 24. <https://blogs.scientificamerican.com/guest-blog/effective-communication-better-science/>
- Hunt, A. 2005. Your research project – How to manage it. Routledge Press, ISBN: 0-415-34408-5 https://www.york.ac.uk/media/biology/documents/careers/managing_research_project.pdf
- Portny, S.E. and J. Austin. 2002. Project Management for Scientists. Science. Jul 12, 2002. <http://www.sciencemag.org/careers/2002/07/project-management-scientists>
- Boss, J.M. and Eckert, S.H. 2004. Academic scientists at work: where’d my day go? Science, April 9. <http://www.sciencemag.org/careers/2004/04/academic-scientists-work-whered-my-day-go>
- Managing conflict in your lab group <http://www.sciencemag.org/careers/2005/09/mind-matters-managing-conflict-lab>
- An Introduction to Conflict Resolution <https://www.skillsyouneed.com/ips/conflict-resolution.html>
- King, A. 2016. Humility in Science: Because Science Always Wins. In-Training. <http://in-training.org/humility-science-science-always-wins-11239>
- Payne, D. 2017. Lindau: The charge of Nobel lasses (and lads): Be humble. Naturejobs, June 28. <http://blogs.nature.com/naturejobs/2017/06/28/lindau-the-charge-of-the-nobel-lasses-and-lads-be-humble#more-53247>
- Stirling, A. 2010. Keep it complex. Nature 468: 1029-1031. <https://www.nature.com/nature/journal/v468/n7327/pdf/4681029a.pdf>
- Historical perspective on Professionalism in Science: Professionalism and Science. 1931. Nature 127:961-963. <https://www.nature.com/nature/journal/v127/n3217/pdf/127961a0.pdf>
- Jensen, D.G. 2015. The many faces of leadership. Science, Dec. 16. <http://www.sciencemag.org/careers/2015/12/many-faces-leadership>
- Pain, E. 2009. Academia or Industry? Finding the Right Fit. Science, May 22. <http://www.sciencemag.org/careers/2009/05/academia-or-industry-finding-right-fit>

SPECIAL SOFTWARE

None required

E-LEARNING

E-learning Canvas. The entire course will be managed through e-learning using Canvas. All materials and content will be available fully on-line delivered in **E-Learning Canvas**, the centrally-supported course management system at UF. Canvas is the on-line source for the majority of your learning resources and assignments in this course. For a link to the tutorial regarding E-Learning Canvas functionality, go to the class home page on canvas. Students enrolled in the course should login to Canvas on the first day of the course at: <http://ss.at.ufl.edu>. You will use your Gatorlink name and password to login to Canvas. Should you have any complaints with your experience in this course please visit <http://www.distance.ufl.edu/student-complaints> to submit a complaint.

GRADING

Task	Description	Points	%
Team Project	Final report, exp. design, presentation	700	64%
Participation	Graded weekly; 10pts/week	150	14%
Reports	5 reports; 30pts/report	150	14%
Individual Work	4 Individual Assignments; 25pts each	100	8%

GRADING SCALE

We will use the following grading for the course:

- A 94.0 – 100%
- A- 90.0 – 93.9%
- B+ 87.0 – 89.9%
- B 83.0 – 86.9%
- B- 80.0 – 82.9%
- C+ 77.0 – 79.9%
- C 73.0 – 76.9%
- C- 70.0 – 72.9%
- D+ 67.0 – 69.9%
- D 63.0 – 66.9%
- D- 60.0 – 62.9%
- E < 60%

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

PROJECT

Students will work in interdisciplinary teams to evaluate, research, and create solutions for an existing problem facing an industry partner. The research teams will work cooperatively with faculty and industry mentors to create a detailed research plan and design and collect necessary data to identify the most effective solution to the industry problem. The final project will consist of two components: 1) a written report that will be submitted to the faculty instructor. This report will include a thorough review of the problem, analysis of the problem within the production system, and a proposed research design for company implementation, and 2) a group presentation to the industry representatives. The presentation should highlight major findings from the review and outline the proposed research approach. Both components will be graded as a group, but individually graded tasks may be assigned at the discretion of the instructor.

PARTICIPATION

Your active participation is critical to your success and the quality of your project and experience in this course. Class participation grades are based on class preparation and participation in class discussions with classmates and industry. See rubric below for grading criteria and point distribution.

	15pts	10pts	5pt
Preparation for Class	Fully prepared, notes/ observations on assignments & readings	Minimum preparation, superficial knowledge of assignments & readings	Unprepared, obviously did not complete assignments & readings
Frequency of Participation	Actively participated in discussions with classmates & industry partners	Minimal involvement in discussions with classmates & industry partners	Did not participate in discussions with classmates & industry partners

REPORTS

Each class assignment has one or more suggested readings or videos that are pertinent to discussion for that week. Students are required to write a 1-page summary and discussion of 5 of these readings or videos. These reports should be submitted to the instructor via Canvas email on dates outlined in course milestones. See "READINGS AND VIDEOS" for report options.

FINAL EXAM

None

CLASSROOM ETIQUETTE AND DEMEANOR

Students are expected to arrive for class on time. Cell phones must be muted during class. Professional attire required when meeting with Industry Partners.

ABSENCES AND MAKE-UP WORK

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: <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>.

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>.

MATERIALS AND SUPPLY FEES:

None

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/scrr/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, www.dso.ufl.edu/drc/

CAMPUS HELPING RESOURCES

Students experiencing crises or personal problems that interfere with their general wellbeing 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, www.counseling.ufl.edu/cwc/ Counseling Services Groups and Workshops Outreach and Consultation Self-Help Library Wellness Coaching
- U Matter We Care, www.umatter.ufl.edu/
- Career Resource Center, First Floor JWRU, 392-1601, www.crc.ufl.edu/

STUDENT COMPLAINTS

- Residential Course: https://www.dso.ufl.edu/documents/UF_Complaints_policy.pdf
- Online Course: <http://www.distance.ufl.edu/student-complaint-process>