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# PLS 4950 Plant Science Capstone

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## **Instructor Contact**

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Email/phone messages: students can expect a response within 24 hrs. M-F and within 72 hrs. on weekends. **My preferred way of communicating with students is using email ([klock@ufl.edu](mailto:klock@ufl.edu)).** I check my UF email frequently every day and on the weekends. If I plan to be out of the office or out of email communication, I will email the class and post an announcement on the class website.

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## **Course (catalog) Description**

Students will identify a problem or topic in plant sciences and develop a poster presentation about this problem or topic. This course will discuss the following topics: how to develop a hypothesis, how to complete a reliable literature review, the importance of peer review, and how to present results and findings.

## **Course Overview**

This course is designed to help students identify a problem or topic in plant sciences and to develop a poster presentation about this problem or topic. At the end of the semester, students will present a poster on a topic, issue or problem in plant science. Presentations will be in Gainesville.

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## **Required Reading**

Carey, Stephen S. 2004. *A Beginner's Guide to Scientific Method, 3<sup>rd</sup> Edition*. Thomson Wadsworth ISBN 0-534-58450-0

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## Course Prerequisites

PLS3004C and PLS4941. One year of employment experience in plant sciences may be substituted for PLS4941 with instructor permission.

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## Acceptable Course Participation

This is an online course. The learning management system Canvas will be used and students are expected to become familiar with using it. The week begins on Monday and ends on Sunday. Students are expected to login to the course website at least once a week (see [schedule](#)) to complete the assignments and/or watch the narrated lecture (see [course goals and assignments](#) & [assessment](#)). The course includes assignments, discussion sessions, independent work, peer assessment, and a final oral and poster presentation.

All course materials will be available via the Canvas course website. Students are expected to participate in online discussions, unless they have an excused absence. Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found in the online catalog at: <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>.

Students are expected to provide feedback on the quality of instruction in this course based on 10 criteria. These evaluations are conducted online at <https://evaluations.ufl.edu>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu>.

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## Course Goals and Assignments:

By the end of this course the student should be able to:

1. Write a hypothesis statement
2. Summarize data and literature without plagiarizing
3. Write clear take-home messages
4. Create a reliable reference list; cite references properly
5. Discuss the value of using templates
6. Critically and positively assess fellow classmates' work
7. Present and discuss their findings in an oral and poster format

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## **Assessment**

See [schedule](#) for dates. The week begins on Monday and ends on Sunday. All discussions and/or assignments need to be completed by the end of each week (Sunday 5 pm, Eastern time zone).

The accepted format for all assignments is MS Office files. If there is a malfunction with the class site or computer malfunctions occur, assignments may be emailed or sent via fax. It is the obligation of the student to inform me of such malfunctions immediately.

### ***In class assignments (100 points) – each is worth 10 points***

- Discussion posts must be completed by Sunday at 5 pm ET. Discussion posts should be well written and address the issue or question being discussed. All posts should be made within in the week assigned. Discussions will be graded on the quality and timeliness of the response (see discussion grading rubric). Each student is expected to comment on **three** fellow class mates' posts. Discussion posts will be accepted up to four days after the due date but will be marked down five points.
  1. Introduce yourself/expectations for the course
  2. Evaluation of hypothesis statements
  3. Take home messages
  4. Value of templates
  5. Self-reflection
- Hypothesis statements: Each student needs to submit and have an approved hypothesis.
- Summarize without plagiarizing assignment
- Take home message assignment
- Progress report
- Peer review: Each student will assess the work of one of their peers. Students are to use the rubric provided by the instructor to evaluate their peer's research report. You are expected to give suggestions for improvement (not just to say it looks OK).

### ***Research Report: (100 pts)***

- Students are expected to write a thorough report on their topic. The report should start with a general introduction to the problem with references. What has been completed or is known about this topic, issue, or problem? What is your hypothesis and why do you feel this is valid? What are potential solutions to this problem? What data do you have to support your hypothesis (question)? The same rubric for the final poster will be used to evaluate the written report

### ***Oral Presentation (100 pts)***

At the final poster session, you will give a 3-minute presentation on your work. The presentation should be the key take home message. Your presentation should have the following

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- 1 to 2 sentences about your problem and why it is important.
- Your hypothesis – what did you test; what is your solution to the problem.
- Take home message. You need to sum up all of your findings into 2 to 3 sentences. Was your hypothesis valid and what is your supporting data?
- Then conclude with comments on the next steps - what would come next.

You will be graded on the following:

1. Communication style: how well did the presenter communicate the topic or information?
2. Comprehension: was the presenter clear and organized?
3. Inspiration and engagement: did the presentation inspire you?
4. Impact: did the presentation have a strong influence on your knowledge or perception?
5. Content: was the presentation content clear and well organized with information pertinent to the subject?

### **Poster Presentation: (100 pts)**

- Define or identify a problem, issue or topic in plant science that is related to teaching, research, extension or your practical work experience.
- Describe the problem and reasons for its importance. Use literature (and data) to support your argument.
- Propose and support potential and/or probable solutions to this problem/issue.

You will use the information from their written report to develop a poster (36 x 48). The poster will include:

1. Introduction to the problem – 1 to 2 sentences
2. Hypothesis– 1 to 2 sentences
3. Background - 2 to 3 sentences
4. Pictures, graphs, tables etc.
5. Take home message
6. Literature cited - 1 to 2 citations
7. Picture of the student in the upper left corner

This is your chance to be creative.

Presentation in Gainesville on date TBA

### **Learning Community Overview**

1. Consider yourself a member of a community. A community is a group of individuals who work together to support a common goal or interest.
2. Treat all contributions made by other members with respect.
3. Keep an open mind.
4. Ask for help when you need it.
5. Assist others when possible. Share questions and ideas with the rest of the class.

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6. Have patience with the technology.
7. Respect diverse opinions and viewpoints of each member in the community.
8. Contribute regularly.
9. All postings shared within this community should reflect acceptable content standards. You are expected to use discretion and if asked you will be expected to demonstrate how your content supports the focus of this community.
10. Student participation on a weekly basis is an essential aspect of the online course process. All students are expected to do the work assigned, notify the instructor when emergencies arise, and make up missing assignments no later than four days after they are due.
11. If at any time, you feel that any of these ground rules have been violated by a member of our community, you are encouraged to bring your concern directly and immediately to the instructor.

Modified 4-25-2010 from [www.learningwithoutwalls.com](http://www.learningwithoutwalls.com)

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### **Netiquette & Discussion Expectations**

Netiquette (short for "network etiquette" or "Internet etiquette") is a set of social conventions that facilitate interaction over networks, ranging from Usenet and mailing lists to blogs and forums (as defined by Wikipedia).

Adapted from Rules of Netiquette (<http://www.albion.com/netiquette/corerules.html>)

1. Remember the human. Never forget that the person reading your mail or posting is, indeed, a person, with feelings that can be hurt.
2. Adhere to the same standards of behavior online that you follow in real life.
3. Know where you are in cyberspace.
4. Respect other people's time and bandwidth
5. Make yourself look good online. Check grammar and spelling before you post. Know what you're talking about and make sense. Do not post flame-bait.
6. Share expert knowledge.
7. Help keep flame wars under control. Flame is a personal attack. It is possible to disagree without attacking the person. Use emoticons and acronyms to convey emotion to avoid misunderstanding.
8. Respect other people's privacy.
9. Don't abuse your power.
10. Be forgiving of other people's mistakes.

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## TOTAL POSSIBLE POINTS & GRADES = 400 pts

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

A	(372-400 points)
A-	(360-371 points)
B+	(344-359 points)
B	(332-343 points)
B-	(320-331 points)
C+	(304-319 points)
C	(296-303 points)
C-	(280-295 points)
D+	(264-279 points)
D	(252-263 points)
D-	(240- 251 points)
E	(0-239 points)

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## Absences 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>.

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## 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.

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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/honorcodes/honorcode.php>.

## 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.

## 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, [www.counseling.ufl.edu/cwc/](http://www.counseling.ufl.edu/cwc/)*
  - Counseling Services
  - Groups and Workshops
  - Outreach and Consultation
  - Self-Help Library
  - Training Programs
  - Community Provider Database
- *Career Resource Center, First Floor JWRU, 392-1601, [www.crc.ufl.edu/](http://www.crc.ufl.edu/)*

## 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/](http://www.dso.ufl.edu/drc/)

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## **Student Complaints**

Each online distance learning program has a process for, and will make every attempt to resolve, student complaints within its academic and administrative departments at the program level. See <http://distance.ufl.edu/student-complaints> for more details.

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## Tentative Schedule –

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Week of	Topic and Assignments	Due Date – 5 pm Eastern Time
<b>Module 1</b> <a href="#">[Top]</a>		
<b>Jan 4</b>	<b>Introduction</b>	
	Lecture 1 – Introduction to the course and expectations	
	Read Chapter 1 - Science	
	Discussion – Introductions and expectations (10 pts)	<b>Jan 8</b>
<b>Jan 9</b>	<b>Identify a Problem</b>	
	Lecture 2 – Problems in research, teaching and extension	
	Read Chapter 2 - Observation	
	Hypothesis (10 pts)	<b>Jan 15</b>
<b>Jan 16</b>	<b>Group Discussion)</b>	
	Read Chapter 3 - Proposing Explanations	
	Meet with group to discussion hypothesis (10 pts)	<b>Jan 22</b>
<b>Jan 23</b>	<b>Literature Review</b>	
	Lecture 3 – How to perform a literature review	
	You Tube Videos on Using the Library	

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Week of	Topic and Assignments	Due Date – 5 pm Eastern Time
	Read Chapter Writing a Science Proposal	
	Summarize without plagiarizing (10 pts)	Jan 29
	Start working on literature review for research report	
<b>Jan 30</b>	<b><i>Defend the importance</i></b>	
	Lecture 4 – Answer the question so what?	
	Lecture 4a – Importance of Peer Review	
	You Tube Video on Citations and the Library	
	Read Chapter 4 – Testing Explanations	
	Take home message (10 pts)	Feb 5
	Identify someone to proof read your paper	Feb 5
<b>Module 2</b>		
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<b>Feb 6</b>	<b><i>Peer review</i></b>	
	Have someone review your paper this week and give you comments/suggestions for improvement	Feb 12
<b>Feb 13</b>	<b><i>Solutions and Outcomes</i></b>	
	Lecture 5 – Solution and outcomes	
	Read Chapter 5 – Establishing Causal Links	
	Discussion – Share take home message (10 pts)	Feb 19
<b>Feb 20</b>	<b><i>Progress report</i></b>	

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<b>Week of</b>	<b>Topic and Assignments</b>	<b>Due Date – 5 pm Eastern Time</b>
	Progress report (10 pts)	<b>Feb 26</b>
<b>Feb 27</b>	<b>Turn in research report</b>	
	Research Report (100 pts)	<b>Mar 5</b>
<b>Mar 6</b>	<b>Spring Break</b>	
<b>Mar 13</b>	<b>Presentations Do's and Don'ts</b>	
	Lecture 6 – What not to do	
	Read Chapter 6 - Fallacies	
	Discussion – Value of templates (10 pts)	<b>Mar 19</b>
<b>Mar 20</b>	<b>Self-reflection</b>	
	Self-reflection discussion (10 pts)	<b>Mar 26</b>
<b>Mar 27</b>	<b>Work on poster and oral</b>	
<b>Module 3</b>		
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<b>Apr 3</b>	<b>Revisions of poster</b>	
	Posters and oral slide due to Dr .Moore	<b>Apr 9</b>
<b>Apr 10</b>	<b>Present project to class - Gainesville</b>	
	Meet in Gainesville for Poster and Oral presentations (200 pts)	<b>Apr 14</b>
<b>Apr 17</b>	<b>Wrap up and discussion about course</b>	

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The paper and poster will include: 1) introduction to the problem, 2) hypothesis, 3) methods, data/evidence background, 4) clear take-home message(s) and 5) next steps.

Criteria	Excellent (5)	Very good (4)	Good (3)	Un-acceptable (2)	Failure (1)
Quality of Presentation (x5)	Strong evidence of preparation, organization, and enthusiasm for topic. Writing is focused, concise, and has a clear fluent progression of ideas. <b>Literature is cited correctly.</b>	There is evidence of preparation, organization, and enthusiasm for the topic. The student clearly links events and relationships and there is no break in progression. There is a sense of completeness. There are a few minor flaws in coherence but the student uses effective vocabulary and sentence structure. Most of the literature is cited correctly.	There is some indication of preparation and organization but may contain some flaws. The project is coherent and somewhat focused with some progression of ideas, although all aspects of the topic may not be covered. Sentence structure is generally correct. Some literature is cited correctly.	Evidence of preparation and organization is lacking. The delivery and sentence structure are understandable but contain many errors. There is a lack of coherence and some responses have no connection to the problem. Most of the literature is cited <b>incorrectly.</b>	There is no indication of preparation or organization. Delivery is difficult to follow and responses do not stay on topic. There is no literature cited.
Introduction and Hypothesis (x5)	The student accurately and clearly describes the problem and provides strong reasons for its importance. Specific literature is cited in support. The student provides a clear well defined hypothesis	The student describes the problem and provides reasons for its importance. An adequate amount of information is given in support. The student provides a hypothesis	The student describes the problem but supporting information is not as strong as a 4 or 5. Hypothesis is adequate.	The student states the problem but fails to describe it or add supporting data or information. Hypothesis is unclear	The topic is unclear and there is no support information provided. No hypothesis.
Methods, Evidence, and Data (x5)	The student provided a description of their methods along with data (evidence) to answer their hypothesis	The student provided a brief description of their methods along with some data to answer their hypothesis.	The students provided some information about their methods and data but they are not as well supported and defended as a 4 or 5.	Very little discussion on methods and minimal data/evidence is presented.	No methods or data is presented; one or both are missing
Summary and Take Home Message (Next Steps) (x5)	The student summarized their findings and connected their evidence to their hypothesis; take home messages were clear; next steps were clearly outlined	The student was proficient with their summary and tied their data to their hypothesis. Take home message was presented and next steps were implied	The student was competent with their summary and attempted to tie it to their hypothesis. Take home message and next steps were not as clear as 4 and 5	The student summary was weak and connections to the hypothesis were vague; take home message and/or next steps not stated	The student did not complete the assignment.