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# Advanced Nutritional Management of Ornamental Crops, HOS5432

## Instructor Contact Info

Dr. Kimberly Moore  
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Office hours: upon request

**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.** 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 Overview

This is an online graduate level course presenting techniques for determining, interpreting, and managing the nutritional status of ornamental horticulture plants in the greenhouse, nursery, or landscape. Topics that will be covered: meter selection and calibration, water analysis, substrate/soil analysis, report interpretation and writing, diagnosis, and recommendations.

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## Required Reading

Jones, J. Benton. 2012. *Plant Nutrition and Soil Fertility Manual 2<sup>nd</sup> Edition*. CRC Press, New York. ISBN -978-1-4398-1609-7

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## Additional Reading

Agnew, M.L., N.H. Agnew, N.E. Christians, and A. M. VanDerZanden. 2008. *Mathematics for the Green Industry*. John Wiley & Sons Inc. Hoboken, NJ.

Epstein, E. and A.J. Bloom. 2004. *Mineral Nutrition of Plants: Principles and Perspectives*. Sinauer Association Inc. Sunderland Mass.

Glass, A.D. M. 1989. *Plant Nutrition. An Introduction to Current Concepts*. Jones and Bartlett Publishers Inc, Boston. ISBN 0-86720-080-4

Marschner, H. 1995. *Mineral Nutrition of Higher Plants, Second Edition*. Academic Press, New York.

Mengel, K. E.A. Kirby, H. Kosegarten, and T. Appel. 2001. *Principles of Plant Nutrition*. Kluwer AC Pub., Boston.

Reed, D.W. (ed) 1996. *Water, Media, and Nutrition for Greenhouse Crops*. Ball Publishing, Batavia, IL.

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Whipker, B.E., J.M. Dole, T.J. Cavins, J.L. Gibson, W.C. Fonteno, P.V. Nelson, D.S. Pitchay, and D.A. Bailey. *Plant Root Zone Management*. North Carolina State University.  
([www.nccfga.org](http://www.nccfga.org))

## Course Prerequisites

SWS 5050, HOS5515C, or consent of instructor

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## Acceptable Course Participation

This is an online course with weekly lectures and assignments. 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 reading assignments and watch the narrated lecture (see [course goals and assignments](#) & [assessment](#)).

All course materials will be available via the Canvas course website. Unless you have an excused absence, students are expected to participate in online discussions and any online zoom meetings. 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/UGRD/academic-regulations/attendance-policies/>

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluation online via GatorEvals. Guidance on how to give feedback in a professional and respectful manual 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.bluera.com/ufl>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.

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## Course Goals and Assignments

Upon successful completion of this course, students will be able to: measure water quality parameters (pH, soluble salts, alkalinity); measure substrate/soil physical parameters (total porosity, air filled porosity and container capacity); measure substrate chemical parameters (pH and soluble salt); select and calibrate meters used in nutritional diagnosis; interpret water analysis reports; interpret soil analysis reports; make recommendations for improving crop growth based on data collected in the field.

This course is divided into three modules (see [schedule](#)). Each module consists of four recorded lectures with related assignments and a challenge assignment. Each week, students will be responsible for completing the reading assignment, watching the narrated lecture, and completing assignments (see [late assignment policy](#)).

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**Discussion posts:** Discussion posts must be completed by Wednesday 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 attachment under syllabus tab). Each student is expected to comment on **two fellow classmates' posts**. Discussion posts will be accepted up to four days after the due date but will be marked down five points. They are worth 10 points.

**Challenge and other assignments:** During the semester, the instructor provide nutritional problems to be diagnosed (challenge) in addition to other assignments. Reports should be written following the guidelines in the rubric attached to the challenge question. Each assignment is worth 25 points.

**Scholar's Ignite:** You will complete **two** scholar's ignite assignments. The first one should be on a topic that you have selected to research and present. Select a topic to research and review. This topic should be an expansion on one of the topics covered in this course. Your goal is to go into more depth on this topic in a short 3-minute recoding. Your second scholars ignite is to find a plant problem (similar to the challenge assignments) that you diagnose; suggest a solution and prepare a 3-minute recording about the problem. Each presentation is worth 100 points for a total of 200 points.

1. Develop a 1-slide, 3-minute presentation using computer software. The presentation should rely upon pictures, tables, or graphs to convey your idea(s). Remember that your presentation should be developed for a diverse audience, thus presented information should be comprehensible to individuals without expertise in the subject area.
2. Upload your presentation within Canvas.

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?

Grades for all assignments will be posted seven days after the student turns them in. If the instructor cannot return the assignment within this time frame, the instructor will notify the student as to when the assignment will be graded. [\[Top\]](#)

## **Assessment**

See [schedule](#) for dates. The week begins on Monday and ends on Sunday. Most discussions are to be completed by Wednesday and other assignments need to be completed by the end of

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each week (Sunday 5 pm, Eastern time zone). When in doubt, please refer to the syllabus for due dates.

The accepted format for all assignments is MS Word 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.

All grades are based on the number of points earned out of total number [of points](#) \* 100 to calculate a percentage.

## **TOTAL POSSIBLE POINTS & GRADES = 515 pts**

Points earned/485 pts\*100 to calculate a percent

For information on current UF policies for assigning grade points, see <https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/>

A	(95-100%)
A-	(90-94%)
B+	(88-89%)
B	(85-87%)
B-	(80-84%)
C+	(78-79%)
C	(75-77%)
C-	(70-74%)
D+	(68-69%)
D	(65-67%)
D-	(60-64%)
E	(0-59%)

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## **Absences and Make-Up Work**

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/UGRD/academic-regulations/attendance-policies/> [\[Top\]](#)

## **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 honor and integrity by abiding by the Honor Code.”*** You are expected to exhibit behavior consistent with

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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://sccr.dso.ufl.edu/process/studnet-conduct-code/>.

## **Software Use**

All faculty, staff and students at 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 Resources**

### **Health and Wellness**

*U Matter, We Care:* If you or someone you know is in distress, please contact [umatter@ufl.edu](mailto:umatter@ufl.edu), 352-392-1575, or visit [umatter.ufl.edu/](http://umatter.ufl.edu/) to refer or report a concern and a team member will reach out to the student in distress.

*Counseling and Wellness Center:* Visit [counseling.ufl.edu/](http://counseling.ufl.edu/) or call 352-392-1575 for information on crisis services as well as non-crisis services.

*Student Health Care Center:* Call 352-392-1161 for 24/7 information to help you find the care you need or visit [shcc.ufl.edu/](http://shcc.ufl.edu/).

*University Police Department:* Visit [police.ufl.edu/](http://police.ufl.edu/) or call 352-392-1111 (or 9-1-1 for emergencies).

*UF Health Shands Emergency Room / Trauma Center:* For immediate medical care call 352-733-0111 or go to the emergency room at 1515 SW Archer Road, Gainesville, FL 32608; [ufhealth.org/emergency-room-trauma-center](http://ufhealth.org/emergency-room-trauma-center).

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## **Academic Resources**

*E-learning technical support:* Contact the UF Computing Help Desk at 352-392-4357 or via e-mail at [helpdesk@ufl.edu](mailto:helpdesk@ufl.edu).

*Career Connections Center:* Reitz Union Suite 1300, 352-392-1601. Career assistance and counseling services [career.ufl.edu/](http://career.ufl.edu/).

*Library Support:* [cms.uflib.ufl.edu/ask](http://cms.uflib.ufl.edu/ask) various ways to receive assistance with respect to using the libraries or finding resources.

*Teaching Center:* Broward Hall, 352-392-2010 or to make an appointment 352- 392-6420. General study skills and tutoring. [teachingcenter.ufl.edu/](http://teachingcenter.ufl.edu/)

*Writing Studio:* 2215 Turlington Hall, 352-846-1138. Help brainstorming, formatting, and writing papers. [writing.ufl.edu/writing-studio/](http://writing.ufl.edu/writing-studio/)

*Student Complaints On-Campus:* [sccr.dso.ufl.edu/policies/student-honor-codestudent-conduct-code/](http://sccr.dso.ufl.edu/policies/student-honor-codestudent-conduct-code/)

*On-Line Students Complaints:* [distance.ufl.edu/student-complaint-process/](http://distance.ufl.edu/student-complaint-process/)

## **Services for Students with Disabilities**

Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, [www.dso.ufl.edu/drc/](http://www.dso.ufl.edu/drc/)) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

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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 5</b>	<b>Introduction/Appraising the Problem</b>	
	Reading – Chapters 1 & 5	
	Lecture 1 – narrated Power Point	
	Introduction (10 pts)	Jan 9
<b>Jan 10</b>	<b>Essential Elements</b>	
	Reading – Chapter 3	
	Lecture 2 – narrated Power Point	
	Phosphorus (10 pts)	Jan 12
	Scholars ignite topics (20 pts)	Jan 16
<b>Jan 17</b>	<b>Nutrient Uptake Mechanisms</b>	
	Reading – Chapter 4	
	Lecture 3 – narrated Power Point	
	Lead in my chocolate (10 pts)	Jan 19
	Diagram Nutrient Uptake (25 pts)	Jan 23
<b>Jan 24</b>	<b>Visual Diagnosis/Tissue Analysis – pros and cons</b>	
	Reading – Chapter 17	
	Lecture 4 – narrated Power Point	
	What’s wrong with my palm (10 pts)	Jan 26

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Week of	Topic and Assignments	Due Date – 5 pm Eastern Time
<u><b>Jan 31</b></u>	<u><b>Disucssion (10 pts)</b></u> <u><b>Challenge – Banana (25 pts)</b></u>	Feb 2 Feb 6
<b>Module 2</b> <a href="#">[Top]</a>		
<b>Feb 7</b>	<b>Meter calibration - Why is this important?</b>	
	Reading – Chapter 16, Appendix B & C	
	Lecture 5 – narrated Power Point	
	What should I do? (10 pts)	Feb 9
<b>Feb 14</b>	<b>Substrate – Physical properties</b>	
	Reading – Chapter 7	
	Lecture 6 – narrated Power Point	
	Melon issues (10 pts)	Feb 16
<b>Feb 21</b>	<b>Substrate-Chemical properties – Soil report interpretation</b>	
	Reading – Chapter 8	
	Lecture 7 – narrated Power Point	
	Same deficiencies (10 pts)	Feb 23
	Duranta problem (25 pts)	Feb 27
<b>Feb 28</b>	<b>Water quality - Water report interpretation</b>	
	Reading – Chapter 22	
	Lecture 8 – narrated Power Point	
	Water quality (10 pts)	Mar 2



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Week of	Topic and Assignments	Due Date – 5 pm Eastern Time
<a href="#"><u>Mar 7</u></a>	<a href="#"><u>Spring Break</u></a>	
<a href="#"><u>Mar 14</u></a>	<a href="#"><u>Challenge –Site Visit (25 pts)</u></a> <a href="#"><u>Scholar’s Ignite I (100 pts)</u></a>	Mar 20
<p><b>Module 3</b> <a href="#">[Top]</a></p>		
<b>Mar 21</b>	<b>Fertilizer analysis</b>	
	Reading – Chapter 19 & 20	
	Lecture 9 – narrated Power Point	
	Best fertilizer (10 pts)	Mar 23
<b>Mar 27</b>	<b>Nutrient Use Efficiency</b>	
	Read – Chapter 27	
	Lecture 10 – narrated Power Pont	
	Respect for soil (10 pts)	Mar 30
	AI in Horticulture (25 pts)	Apr 3
<b>Apr 4</b>	<b>Mismanagement Issues</b>	
	Read – Chapter 26	
	Lecture 11 – narrated Power Point	
	Growing plants without water (10 pts)	Apr 6
<a href="#"><u>Apr 11</u></a>	<a href="#"><u>Challenge –Soil Report Nassau (25 pts)</u></a> <a href="#"><u>Scholar’s Ignite II (100 pts)</u></a>	Apr 17
<a href="#"><u>Apr 18</u></a>	<a href="#"><u>Challenge me (25 pts)</u></a>	Apr 24