

## **COURSE SYLLABUS – FALL 2021**

### **SOIL FERTILITY AND PLANT NUTRITION**

**COURSE TITLE/ID:** Soil Fertility and Plant Nutrition, CRSS (HORT) (ECOL) 4590/6590

*The course syllabus is a general plan for the course; deviations announced to the class by the instructor may be necessary.*

**COURSE DESCRIPTION:** Soil conditions affecting availability of plant nutrients; function and movement of nutrients in plants; methods of determining nutrient levels in plants, soils, and other growing media, environmental quality associated with application of fertilizers.

**PREREQUISITES:** CHEM 1211-1211L and CRSS 3050-3050L or CRSS(FORS) 3060-3060L or permission of major.

**REQUIRED COURSE MATERIAL:** *Soil Fertility and Fertilizers by John L. Havlin et al. 8th edition.*

**COURSE OBJECTIVES:** The objective of this course is to provide students with a comprehensive understanding of soil fertility, plant nutrition, and nutrient management so that they can:

- 1) Describe the influence of chemical, biological, and physical properties of soil and other growing media on nutrient availability to plants;
- 2) Identify soil (or growing media) fertility and plant nutrition problems and recommend proper corrective action;
- 3) Identify soil (or growing media) and nutrient management practices that maximize plant productivity and profitability while maintaining or enhancing environmental quality.

#### **TOPICAL OUTLINE** (tentative):

1. Soil Fertility and Plant Nutrition (Chapter 1)
2. Basic Soil-Plant Relationships (Chapter 2)
3. Nutrient Transport in Plants (Chapter 2)
4. Soil Acidity and Alkalinity (Chapter 3)
5. Nitrogen in Soil and Plants (Chapter 4)
6. Phosphorus and Potassium in Soil (Chapters 5 and 6)
7. Phosphorus and Potassium in Plants (Chapters 5 and 6)
8. Sulfur, Calcium, and Magnesium in Soil (Chapter 7)
9. Sulfur, Calcium, and Magnesium in Plants (Chapter 7)
10. Micronutrients in Soil (Chapter 8)
11. Micronutrients in Plants (Chapter 8)
12. Evaluation of Soil Fertility and Plant Nutrition (Chapter 9)
13. Nutrient Management (Chapters 10, 11, 12)
14. Nutrients and Environmental Quality (Chapter 13)

## ACADEMIC HONESTY POLICY

*All academic work must meet the standards contained in “A Culture of Honesty.” Students are responsible for informing themselves about those standards before performing any academic work. See <https://honesty.uga.edu/Academic-Honesty-Policy/>*

### INSTRUCTORS:

Dr. Miguel Cabrera - Room 4119 Miller Plant Sciences Bldg. -- 542-1242, [mcabrera@uga.edu](mailto:mcabrera@uga.edu)

Dr. Anish Malladi – Room 1121, Miller Plant Sciences Bldg. – 542-0783, [malladi@uga.edu](mailto:malladi@uga.edu)

### OFFICE HOURS:

Miguel L. Cabrera – schedule by email.

Anish Malladi – schedule by email.

**INSTRUCTION:** Students in Athens, Griffin, and Tifton are expected to attend lectures at the rooms designated on each campus.

**Problem Sets:** On several weeks during the course, students will be given a problem set on Thursday to emphasize the application of concepts covered in class. The problem set will be due the following Thursday by 5 pm and should be submitted to the corresponding folder on ELC as a Word or pdf file. Please label the file as “Set#\_LastName” where # represents the problem set number (1 through X).

**Quizzes:** From time to time students will take a quiz that will consist of a few questions on the lecture materials or on assigned materials to read.

**Exams:** There will be three midterm exams with tentative dates shown below. *Exams for graduate students will be more extensive than those for undergraduate students.*

Exam 1 – September 30, 2021

Exam 2 - October 26, 2021

Exam 3 - November 23, 2021

Final Exam – December 14, 2021 – 3:30-6:30 pm

**Graduate students will also be required to write a term paper on a topic agreed in consultation with the course instructors. The term paper will count for 20% of the final course grade. *The paper is due on December 6, 2021, and should be emailed to both instructors. Please label the file as “Paper\_LastName”.***

## GRADING POLICY

Lect. Quizzes	10%
Problem Sets	20%
First Exam	10%
Second Exam	15%
Third Exam	20%
Final Exam	25%
<b>TOTAL</b>	100% (80% for graduate students (paper 20%))

## USEFUL REFERENCES

Russell's Soil Conditions and Plant Growth by A. Wild (Ed.). 1988.

Soil Science Principles & Practices by R.L. Hausenbuiller. 1985.

Mineral Nutrition of Higher Plants by H. Marschner. 1995.

Principles of Plant Nutrition by K. Mengel and E.A. Kirkby. 2001.

## POLICY FOR MAKE-UP OF EXAMS

Exams may be made up with proper justification of the reasons why the student could not take them at the specified dates and times. Make-up exams may be administered as oral exams.

# STAY SAFE, BULLDOGS!

- ✓ Vaccinate. With every person we vaccinate, our community becomes safer and stronger.
- ✓ Unvaccinated? You are **strongly encouraged** to social distance and wear face coverings inside campus facilities.
- ✓ Continue to self-monitor for any symptoms of COVID-19. You are **required** to report a positive COVID-19 test through DawgCheck.
- ✓ Get tested if you are not fully vaccinated. Participation in surveillance testing still plays an important role in preventing further spread.
- ✓ If you feel sick, stay home.
- ✓ Wash your hands frequently and use hand sanitizer.

LEARN MORE AT  
[coronavirus.uga.edu](https://coronavirus.uga.edu)

GEORGIA STRONG.  
DAWG STRONG.

## **CORONAVIRUS INFORMATION FOR STUDENTS**

### **Masks and Face Coverings**

For Fall Semester 2021, UGA strongly encourages that face coverings must be worn at all times when in university facilities. The Centers for Disease Control (CDC) strongly recommends the following precautions to keep you and your family safe:

- **Get vaccinated**
- Quarantine if you are exposed and unvaccinated
- Isolate when you have symptoms
- Don't come to class if you think you may be ill
- Wear a mask
- Social distance
- Avoid crowds and poorly ventilated spaces
- Wash your hands often
- Cover sneezes and coughs
- Monitor your health daily

### **Face coverings and social distancing:**

Following guidance from the University System of Georgia, face coverings are no longer required inside campus facilities, including classrooms. However, unvaccinated individuals are strongly encouraged to continue wearing face coverings while inside campus facilities and socially distancing from others when possible.

Best recommendations may change: Most recent at time of updating syllabus is below from the following UGA covid portal: <https://coronavirus.uga.edu/> Links below are not hot.

### **Campus Operations**

The University of Georgia has released several key pieces of information in preparation for the return to normal campus operations. Full details can be found on the [Campus Messages](#) page of this site.

Recent announcements include:

- Our campus community becomes safer and stronger with every person who is vaccinated against COVID-19. While being vaccinated against COVID-19 is not required for attendance at UGA, it is **strongly encouraged**. Thanks to a new statewide initiative, it is now easier than ever for current and incoming students to get their vaccines. [Schedule an appointment](#) at one of the 15 participating campuses in the University System of Georgia nearest to you. [Locate additional community vaccination sites](#) through the Centers for Disease Control and Prevention's vaccination locator. [Schedule an appointment](#) directly with the University Health Center.
- The University Health Center has broadened vaccination eligibility to include eligible dependents of UGA faculty, staff and students; UGA retirees; spouses/partners of retirees, faculty, staff, and students; visitors to campus engaged in research, academic or non-academic summer engagement/transition opportunities; those visiting campus as part

of Orientation; and active employees and (primarily) students enrolled at other USG institutions who live in the Athens vicinity. **For those members of the expanded eligibility groups listed above, please [submit this survey](#), and the UHC will reach out to you to schedule the appointment directly.** Please note that the UHC will provide second doses to any student, even if they have graduated before the date of their second dose is due.

- The Division of Marketing & Communications has updated signage templates to reflect key points from USG's recent campus guidelines. These have been uploaded to the [Digital Arch portal](#).
- Four University of Georgia experts answered some of the most frequently asked questions about COVID-19 vaccines in a recent virtual panel discussion held on campus. Moderated by Dr. Shelley Nuss, dean of the Augusta University/University of Georgia Medical Partnership, panelists discussed a variety of topics related to vaccine safety and efficacy. [Watch the complete session](#) to learn more about how the available COVID-19 vaccines can help keep you and your family safe.

### **How can I obtain the COVID-19 vaccine?**

University Health Center is scheduling appointments for students through the UHC Patient Portal ([https://patientportal.uhs.uga.edu/login\\_dualauthentication.aspx](https://patientportal.uhs.uga.edu/login_dualauthentication.aspx)). Learn more here – <https://www.uhs.uga.edu/healthtopics/covid-vaccine>.

### **What do I do if I have COVID-19 symptoms?**

Students showing COVID-19 symptoms should self-isolate and schedule an appointment with the University Health Center by calling 706-542-1162 (Monday-Friday, 8 a.m.-5p.m.). Please DO NOT walk-in. For emergencies and after-hours care, see, <https://www.uhs.uga.edu/info/emergencies>.

### **What do I do if I test positive for COVID-19?**

If you test positive for COVID-19 at any time, you are **required to report it** through the [DawgCheck Test Reporting Survey](#). We encourage you to stay at home if you become ill or until you have excluded COVID-19 as the cause of your symptoms. UGA adheres to current CDC quarantine and isolation guidance and requires that it be followed.

### **Guidelines for COVID-19 Quarantine Period (Revised 6/7/21)**

Students who are fully vaccinated **do not** need to quarantine upon exposure unless they have symptoms of COVID-19 themselves. All others must follow the following recommendations. Students who **are not fully vaccinated and have been directly exposed to COVID-19 but are not showing symptoms should self-quarantine for 10 days**. Those quarantining for 10 days must have been symptom-free throughout the monitoring period and continue self-monitoring for COVID-19 symptoms for a total of 14 days. Please correspond with your instructor via email, with a cc: to Student Care & Outreach at [sco@uga.edu](mailto:sco@uga.edu), to coordinate continuing your coursework while self-quarantined.

Fully vaccinated people who have come into close contact with someone with COVID-19 should be **tested 3-5 days following the date of** their exposure and wear a mask in public indoor settings for 14 days or until they receive a negative test result. They should isolate if they test positive.

For most up to date recommendations from CDC see:

[\*\*Interim Public Health Recommendations for Fully Vaccinated ...\*\*](#)

[https://www.cdc.gov > coronavirus > 2019-ncov > vaccines](https://www.cdc.gov/coronavirus/2019-ncov/vaccines)

**Monitoring conditions:**

Note that the guidance referenced in this syllabus is subject to change based on recommendations from the Georgia Department of Public Health, Centers for Disease Control, Governor's Office or University System of Georgia. For the latest on UGA policy, you can visit

[www.coronavirus.uga.edu](http://www.coronavirus.uga.edu).