

**Citrus Culture and Production**  
FRC 3212 (3 credits)  
Fall Semester 2017  
Classroom: Plant Science Facility (PSF) 4  
Tuesdays, periods 3-4 and Thursdays, period 3

**Course Description and Requirements**

**Instructors:** Dr. José X. Chaparro  
Fifield Hall  
562-3076  
Email: [jchaparro@ifas.ufl.edu](mailto:jchaparro@ifas.ufl.edu)

Dr. Vicente J. Febres  
Fifield Hall 1134  
273-4799  
Email: [vjf@ufl.edu](mailto:vjf@ufl.edu)

Dr. Gloria A. Moore  
Fifield Hall  
273-4799  
Email: [gamoore@ufl.edu](mailto:gamoore@ufl.edu)

**Prerequisites:** This introductory course is intended for students who have no prior coursework in citrus, although participation by those with citrus backgrounds is encouraged. It is highly desirable for students to have some background in botany (BOT 2011) and/or horticulture (HOS 3020). Students in FRE or business have performed well in this course in the past.

**Text and Lecture Notes:** “Citrus Growing in Florida”, 2009 by F. S. Davies and L.K. Jackson. This book is on reserve in the Marston Science Library. PowerPoint lecture notes will be distributed via an email Listserv at the end of each week. There is also valuable information in the Citrus page of EDIS (Electronic Data Information Source) of UF/IFAS Extension ([http://edis.ifas.ufl.edu/TOPIC\\_Citrus](http://edis.ifas.ufl.edu/TOPIC_Citrus)), the Florida Citrus Production Guide (<http://www.crec.ifas.ufl.edu/extension/pest/>) and UF/IFAS Citrus Extension, Plant Pathology ([http://www.crec.ifas.ufl.edu/extension/plant\\_pathology/](http://www.crec.ifas.ufl.edu/extension/plant_pathology/)).

**Course Content and Objectives**

The objective of this course is to provide the student with a basic understanding of the world citrus industry. Emphasis will be placed on world, U.S., and Florida production regions, citrus botany, terminology, site selection, fruit quality factors, scion and rootstock characteristics, grove design, and production practices.

## Grading and Attendance Policies

I strongly urge students to attend class on a regular basis. Attendance will be considered at the end of the semester and may affect the final grade. Final grades will be based on the performance of each student relative to the following standard percentages:

100-93	A
92-90	A-
89-87	B+
86-83	B
82-80	B-
79-77	C+
76-73	C
72-70	C-
69-67	D+
66-63	D
62-60	D-
59-00	E

There will be 4 in-class exams (400 points) and participation in two labs and a field trip (200). There is no final exam. The labs will be during regular class hours and the field trip will be on a weekend (the exact date will be announced later).

The final grades will be determined as in the following example:

	Possible	Example
Exams (4)	400	360
Labs & Field Trip	200	180
Total	600	$540/600 * 100 = 90 = \text{A-}$

Please feel free to discuss your grades at any time during the semester.

### Exam Policy

You must attend on days of the exams. Students who miss exams will receive a zero for those exams.

We encourage all of you to participate in the class whether you come from a citrus background or not. Please feel free to ask questions at any time and to discuss any aspect of the course with the instructor. Instructors are also available by appointment either by calling/emailing to the numbers/addresses indicated above.

### Academic Honesty, Software Use, Services for Students with Disabilities, UF Counseling Services:

The University of Florida requires all members of its community to be honest in all endeavors. Cheating, plagiarism, and other acts diminish the process of learning. When students enroll at UF they commit themselves to honesty and integrity. Your instructor fully expects you to adhere to the academic honesty guidelines you signed when you were admitted to UF.

As a result of completing the registration form at the University of Florida, every student has signed the following statement:

*“I understand the University of Florida expects its students to be honest in all their academic work. I agree to adhere to this commitment to academic honesty and understand that my failure to comply with this commitment may result in disciplinary action up to and including expulsion from the University.”* Furthermore, on work submitted for credit by UF students, 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 to be assumed all work will be completed independently unless the assignment is defined as group project, in writing by the professor.

This policy will be vigorously upheld at all times in this course.

### **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 crisis or personal problems that interfere with their general wellbeing are encouraged to utilize the university’s counseling resources. Both the Counseling Center and Student Mental Health provide confidential counseling services at no cost for currently enrolled students. Resources are available on campus for students having personal or lacking clear career and academic goals, which interfere with their academic performance. The Counseling & Wellness Center is located at 3190 Radio Road. The Student Mental Health and the Counseling Centers have consolidated into a single comprehensive center to better serve the needs of the University of Florida students and campus community.

- 1 University Counseling & Wellness Center, 3190 Radio Road, 392-1575; student mental health, personal and career counseling: <https://www.counseling.ufl.edu/cwc/>
- 2 Student Health Care Center, 392-1161, personal counseling: <http://www.shcc.ufl.edu/>
- 3 Sexual Assault Recovery Services (SARS), Student Health Care Center, 392-1161, sexual assault counseling; and
- 4 Career Resource Center, Reitz Union, 392-1601, career development Assistance and counseling.

### **Students with Disabilities Act:**

The Dean of Students Office coordinates the needed accommodations of students with disabilities. This includes the registration of disabilities, academic accommodations within the classroom, accessing special adaptive computer equipment, providing interpretation services, and mediating faculty-student disability related issues. Dean of Students Office, 202 Peabody Hall, 392-7066 [www.dso.ufl.edu](http://www.dso.ufl.edu).

**Lecture Schedule**  
**Citrus Culture & Production**  
**FRC 3212, Fall 2017**

<b>Week</b>	<b>Date</b>	<b>Topic</b>	<b>Suggested Reading</b>
1	Tuesday, August 22, 2017	1- Introduction.	Syllabus
1	Tuesday, August 22, 2017	2- History and world production.	Chapter 1
1	Thursday, August 24, 2017	3- Production in Florida and the rest of the U.S.A.	Chapter 1
2	Tuesday, August 29, 2017	4- Nomenclature and Systematics.	Chapter 3
2	Thursday, August 31, 2017	5- Oranges.	Chapter 4
3	Tuesday, September 05, 2017	6- Mandarins.	Chapter 4
3	Tuesday, September 05, 2017	7- Grapefruits.	Chapter 4
3	Thursday, September 07, 2017	8- Lemons, limes and other hybrids.	Chapter 4
4	Tuesday, September 12, 2017	<i>Grafting Practice.</i>	Chapter 6
4	Thursday, September 14, 2017	9- Climate, growth and fruit quality.	Chapter 2
<b>5</b>	<b>Tuesday, September 19, 2017</b>	<b>Exam 1</b>	
5	Thursday, September 21, 2017	10-Soils.	Chapter 2
6	Tuesday, September 26, 2017	11- Nutrition and Fertilization.	Chapters 8, 9
6	Tuesday, September 26, 2017	12- Irrigation and water relations.	Chapters 8, 9
6	Thursday, September 28, 2017	13- Site selection, grove design and planting.	Chapter 7
7	Tuesday, October 03, 2017	14- Rootstocks.	Chapter 5
7	Thursday, October 05, 2017	15- Growth regulators, pruning and training.	Chapter 9
8	Tuesday, October 10, 2017	16- Vegetative growth and development (KR).	Chapter 3
8	Tuesday, October 10, 2017	17- Reproductive growth and fruit development (KR).	Chapter 3
8	Thursday, October 12, 2017	18- Parthenocarpy and seedless fruits (BN).	Chapter 3
<b>9</b>	<b>Tuesday, October 17, 2017</b>	<b>Exam 2</b>	
9	Thursday, October 19, 2017	19- Breeding of rootstocks and scions.	Chapters 4, 5
10	Tuesday, October 24, 2017	19- Breeding of rootstocks and scions.	Chapters 4, 5
10	Thursday, October 26, 2017	20- Plant propagation and tissue culture.	Chapter 6
11	Tuesday, October 31, 2017	<i>Tissue culture Practice</i>	

<b>Week</b>	<b>Date</b>	<b>Topic</b>	<b>Suggested Reading</b>
11	Thursday, November 02, 2017	21- Secondary compounds (QA).	<a href="#">Natural bioactive compounds of <i>Citrus limon</i> for food and health</a>
<b>12</b>	<b>Tuesday, November 07, 2017</b>	<b>Exam 3</b>	
12	Thursday, November 09, 2017	22- Abiotic stress.	<a href="#">Rootstock Breeding for Abiotic Stress Tolerance in Citrus ; Multiple abiotic stresses occurring with salinity stress in citrus</a>
13	Tuesday, November 14, 2017	23- Principles of plant pathology and disease management.	<a href="#">Ten Principles of Plant Pathology ; Fundamental Principles of Plant Pathology for Agricultural Producers</a>
13	Tuesday, November 14, 2017	24- Viral diseases.	Chapter 10; <a href="#">Florida Citrus Production Guide</a>
13	Thursday, November 16, 2017	25- Bacterial diseases.	Chapter 10; <a href="#">Florida Citrus Production Guide</a>
14	Tuesday, November 21, 2017	26- Fungal diseases.	Chapter 10; <a href="#">Florida Citrus Production Guide</a>
<b>14</b>	<b>Thursday, November 23, 2017</b>	<b>Holiday</b>	
15	Tuesday, November 28, 2017	27- Pests: arthropods, nematodes and weeds.	Chapter 10; <a href="#">Florida Citrus Production Guide</a>
15	Tuesday, November 28, 2017	28- Harvest and post-harvest.	Chapter 11
15	Thursday, November 30, 2017	Review.	
<b>16</b>	<b>Tuesday, December 05, 2017</b>	<b>Exam 4</b>	